



Appendix for Test report

Appendix A: DTS (6 dB) Bandwidth

In this document, the "DTS6dBBW" refers to the measured "DTS (6 dB) Bandwidth" value. In this Appendix, the "fc(DTS6dBBW)" refers to the centre of the measured "DTS6dBBW". The introduction of the "fc(DTS6dBBW)" is due to that other measurements use it as the spectrum analyzer setting.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

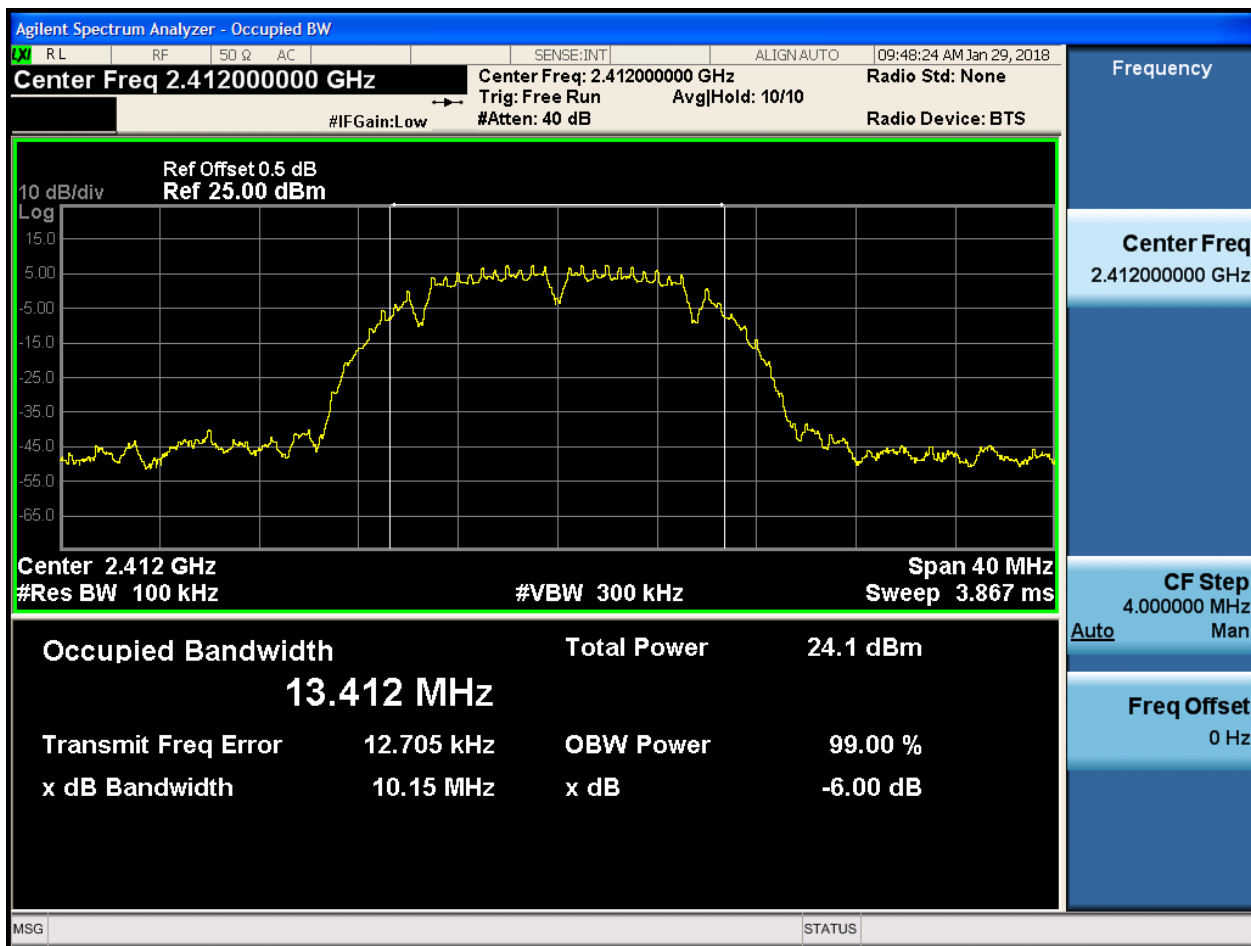
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	10.15	pass
11B	L	2412	Ant 2	10.15	pass
11B	M	2437	Ant 1	10.16	pass
11B	M	2437	Ant 2	10.15	pass
11B	H	2452	Ant 1	10.15	pass
11B	H	2452	Ant 2	10.15	pass
11B	H	2462	Ant 1	10.16	pass
11B	H	2462	Ant 2	10.16	pass
11G	L	2412	Ant 1	15.14	pass
11G	L	2412	Ant 2	15.08	pass
11G	M	2437	Ant 1	15.16	pass
11G	M	2437	Ant 2	15.16	pass
11G	H	2452	Ant 1	15.11	pass
11G	H	2452	Ant 2	15.14	pass
11G	H	2462	Ant 1	15.16	pass
11G	H	2462	Ant 2	15.13	pass
11N20	L	2412	Ant 1	15.16	pass
11N20	L	2412	Ant 2	13.93	pass
11N20	M	2437	Ant 1	15.13	pass
11N20	M	2437	Ant 2	15.02	pass
11N20	H	2452	Ant 1	15.12	pass
11N20	H	2452	Ant 2	15.11	pass
11N20	H	2462	Ant 1	15.15	pass
11N20	H	2462	Ant 2	13.90	pass
11N20m	L	2412	Ant 1	15.17	pass
11N20m	L	2412	Ant 2	15.35	pass
11N20m	M	2437	Ant 1	15.16	pass

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11N20m	M	2437	Ant 2	15.74	pass
11N20m	H	2452	Ant 1	15.14	pass
11N20m	H	2452	Ant 2	15.16	pass
11N20m	H	2462	Ant 1	15.11	pass
11N20m	H	2462	Ant 2	15.69	pass
11N40	L	2422	Ant 1	35.12	pass
11N40	L	2422	Ant 2	35.14	pass
11N40	M	2437	Ant 1	35.11	pass
11N40	M	2437	Ant 2	35.12	pass
11N40	H	2452	Ant 1	35.07	pass
11N40	H	2452	Ant 2	35.14	pass
11N40m	L	2422	Ant 1	35.12	pass
11N40m	L	2422	Ant 2	35.12	pass
11N40m	M	2437	Ant 1	35.14	pass
11N40m	M	2437	Ant 2	35.13	pass
11N40m	H	2452	Ant 1	35.11	pass
11N40m	H	2452	Ant 2	35.14	pass

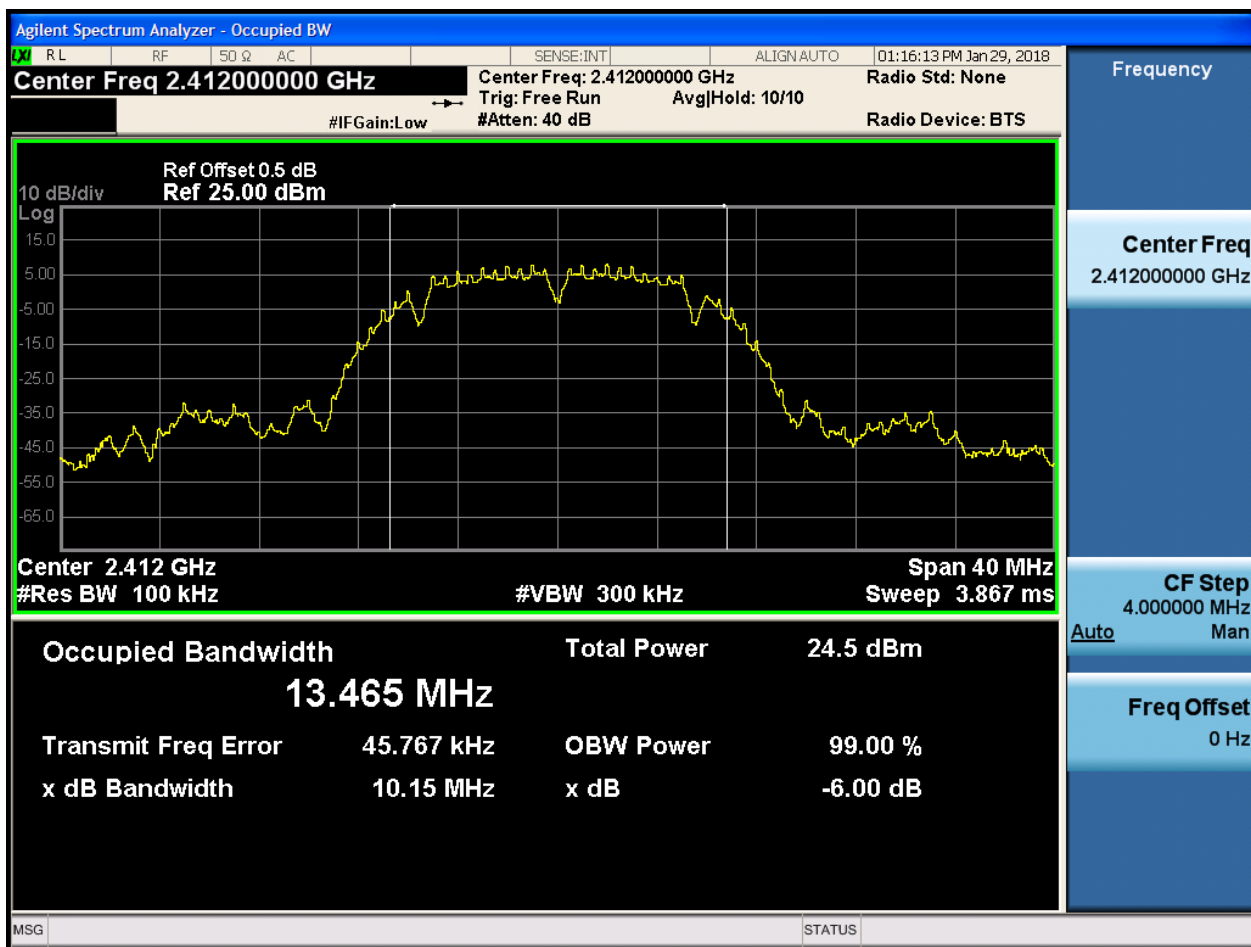
Part II - Test Plots

2.1 11B_L@Ant 1



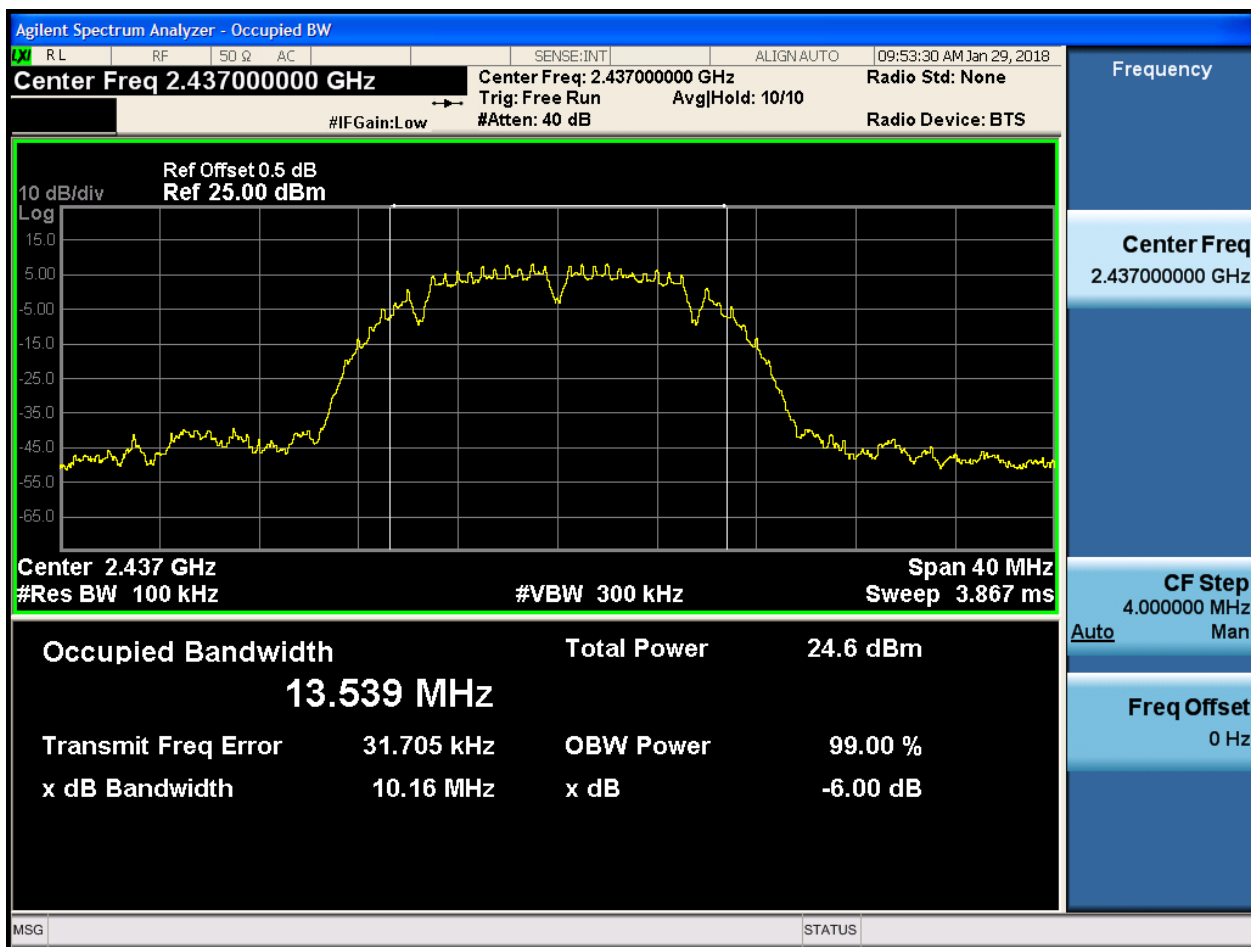


2.2 11B_L@Ant 2



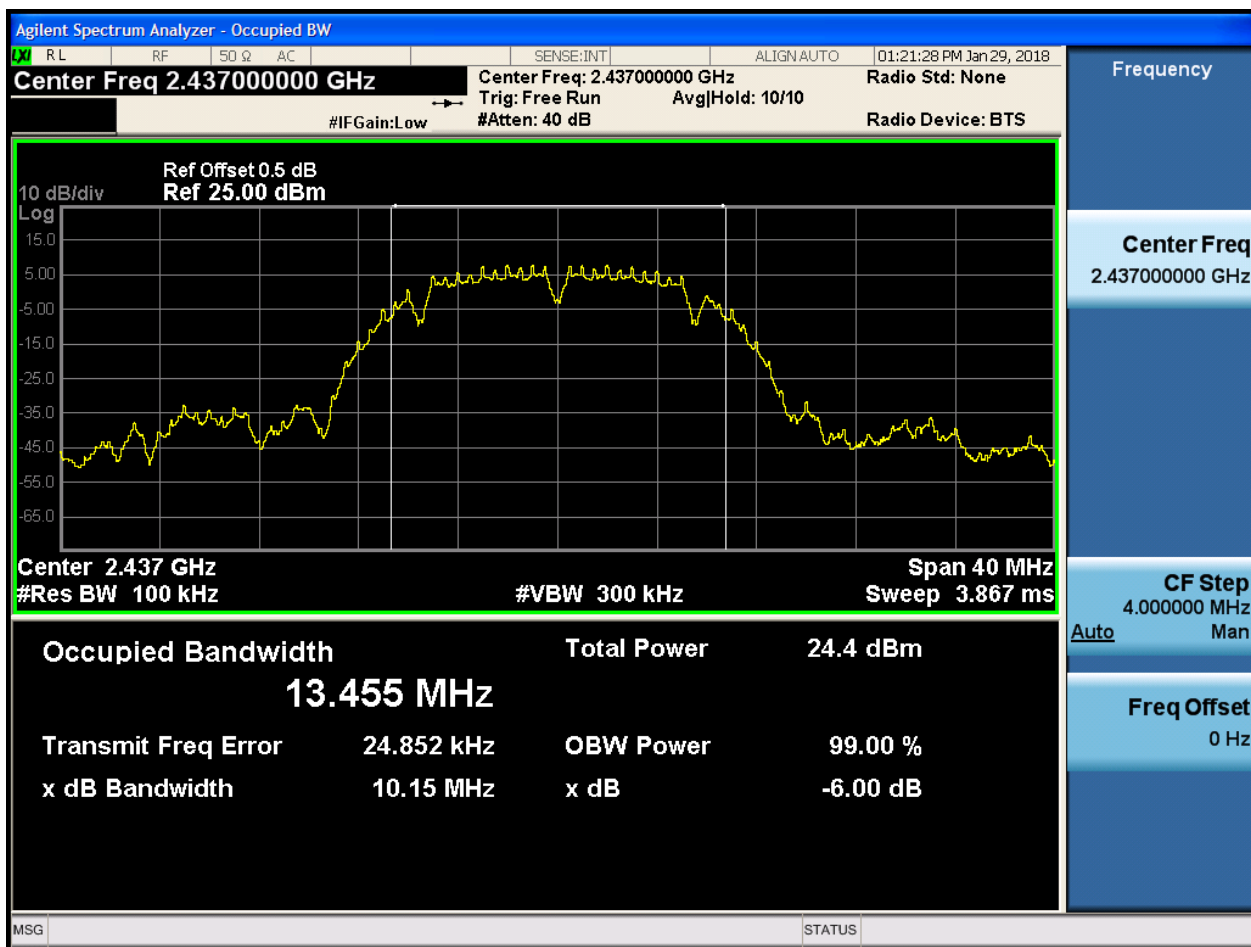


2.3 11B_M@Ant 1



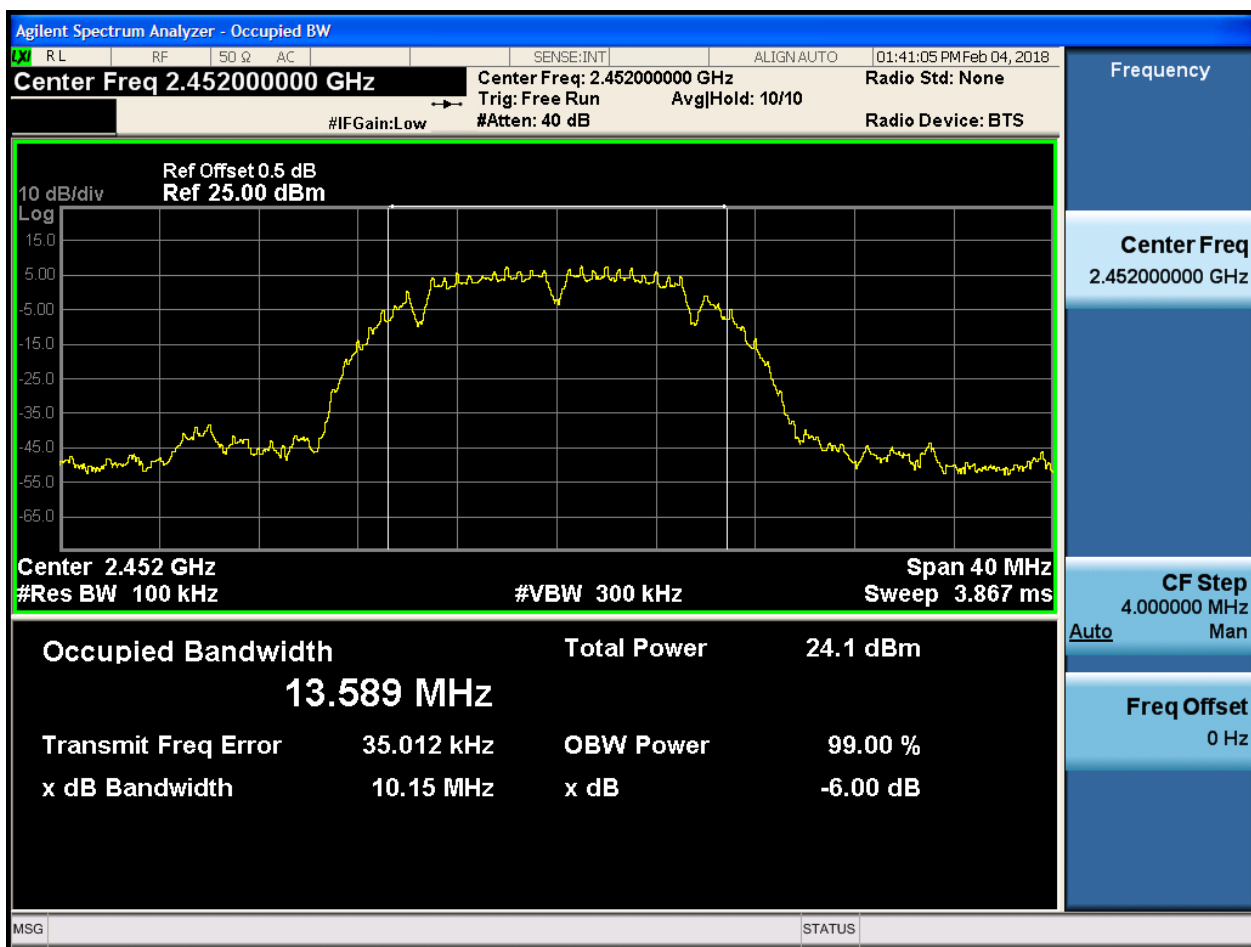


2.4 11B_M@Ant 2



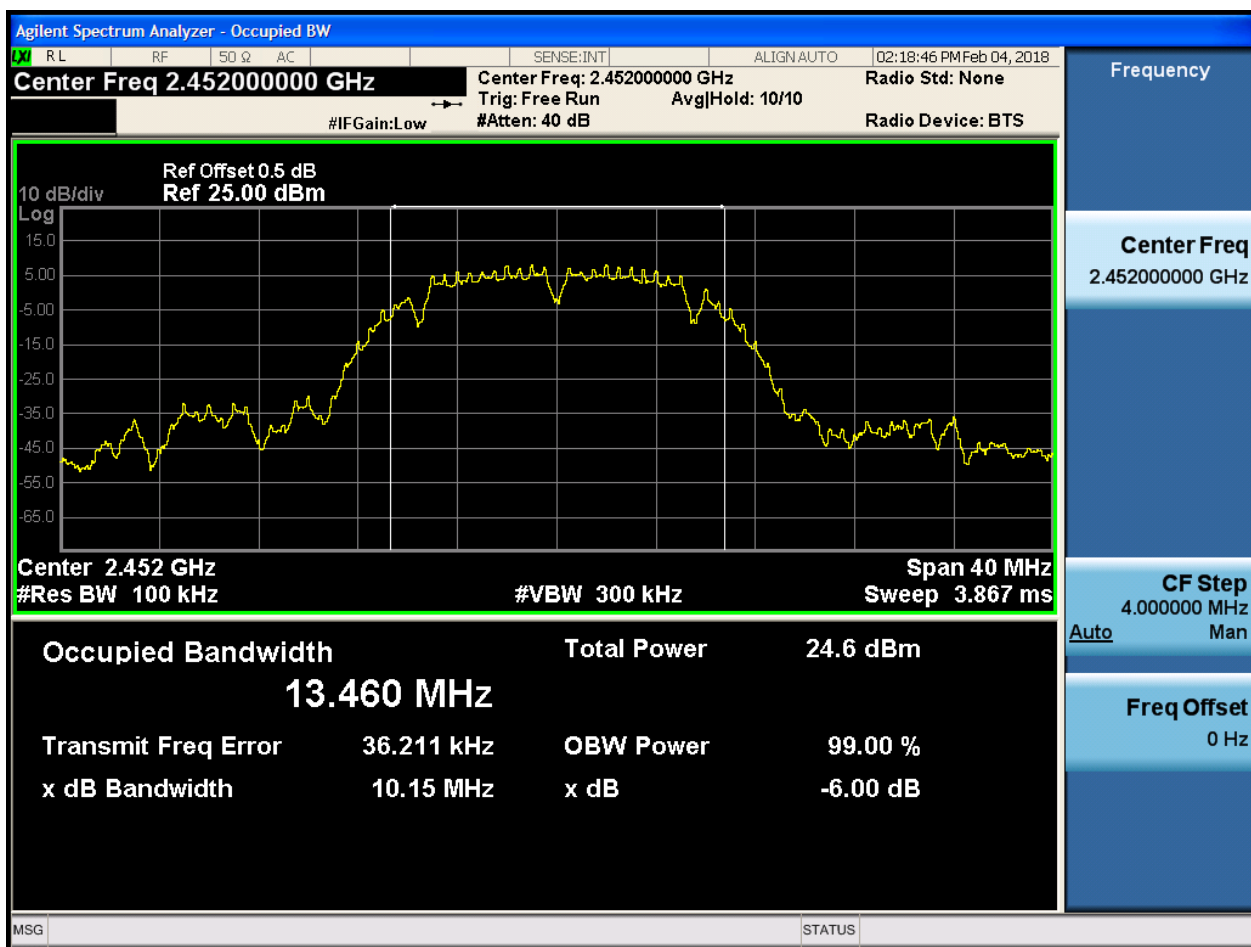


2.5 11B_H_2452@Ant 1



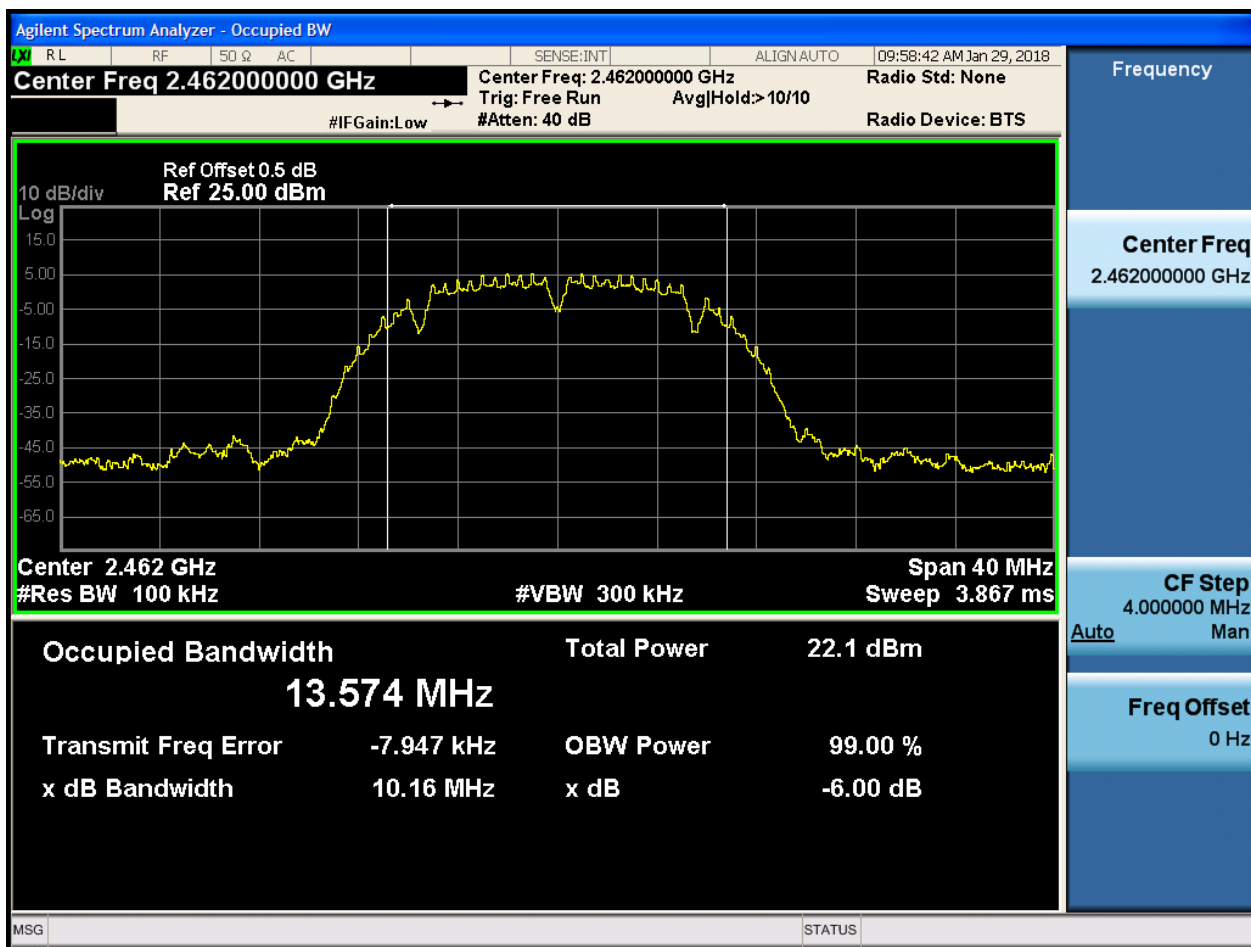


2.6 11B_H_2452@Ant 2



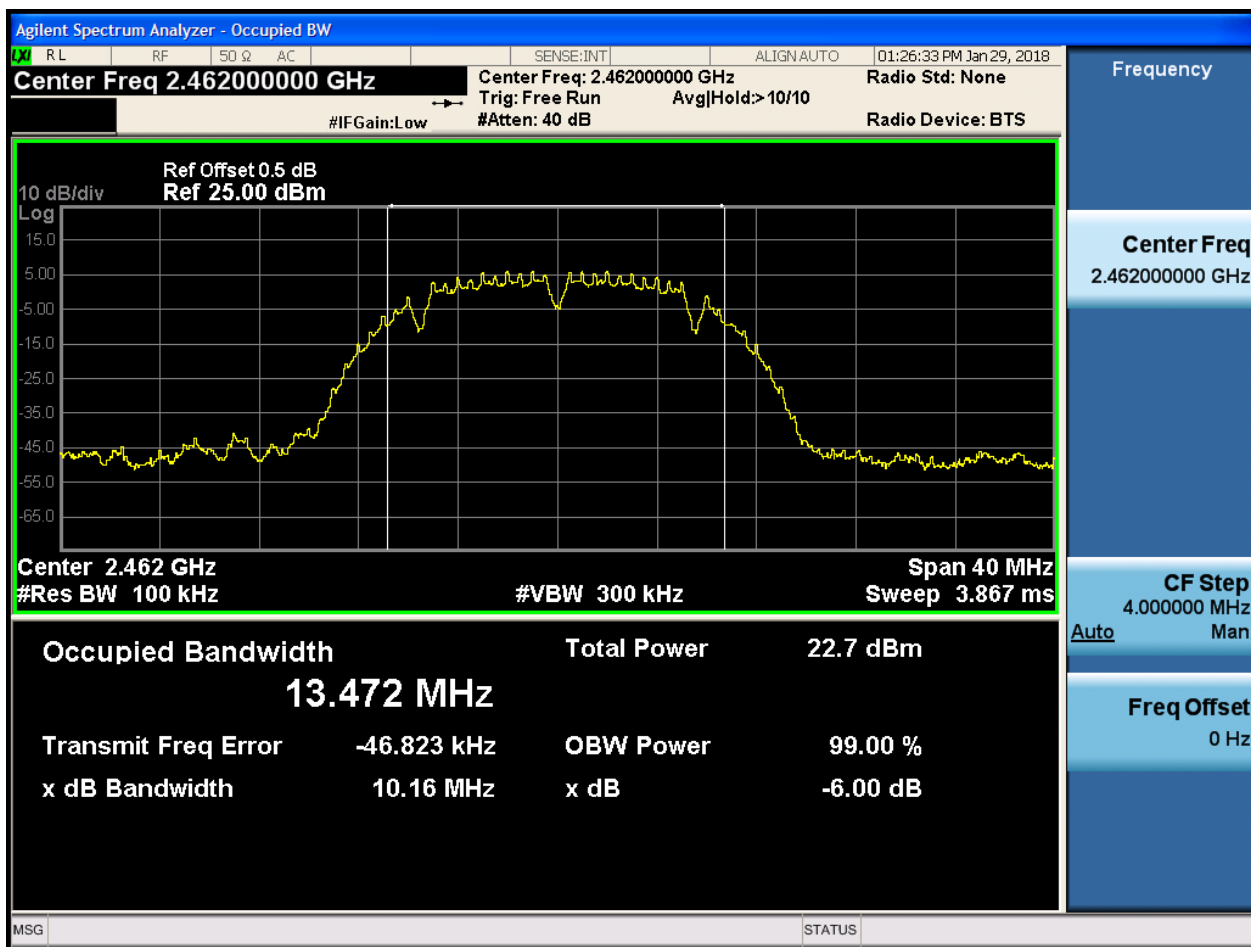


2.7 11B_H_2462@Ant 1



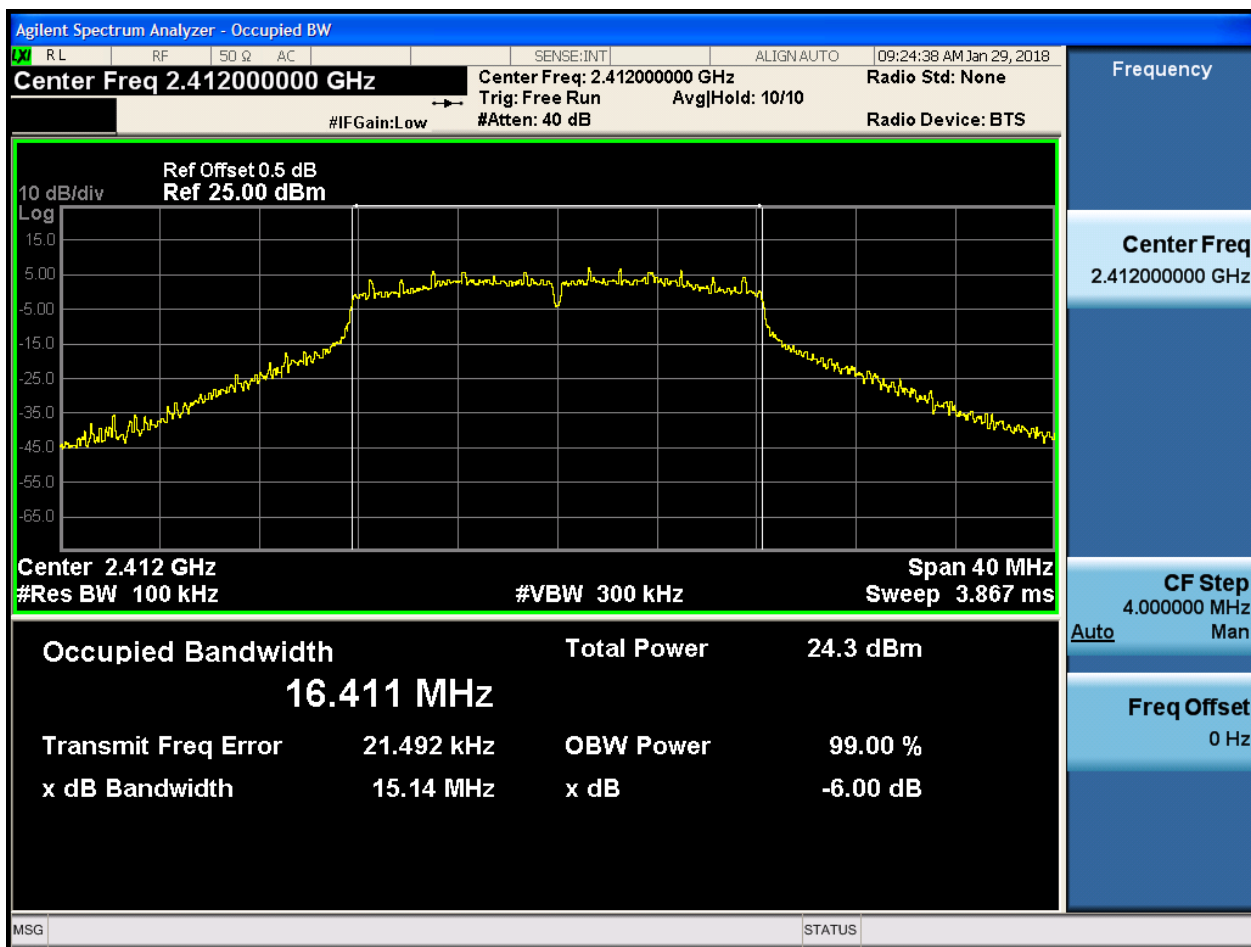


2.8 11B_H_2462@Ant 2



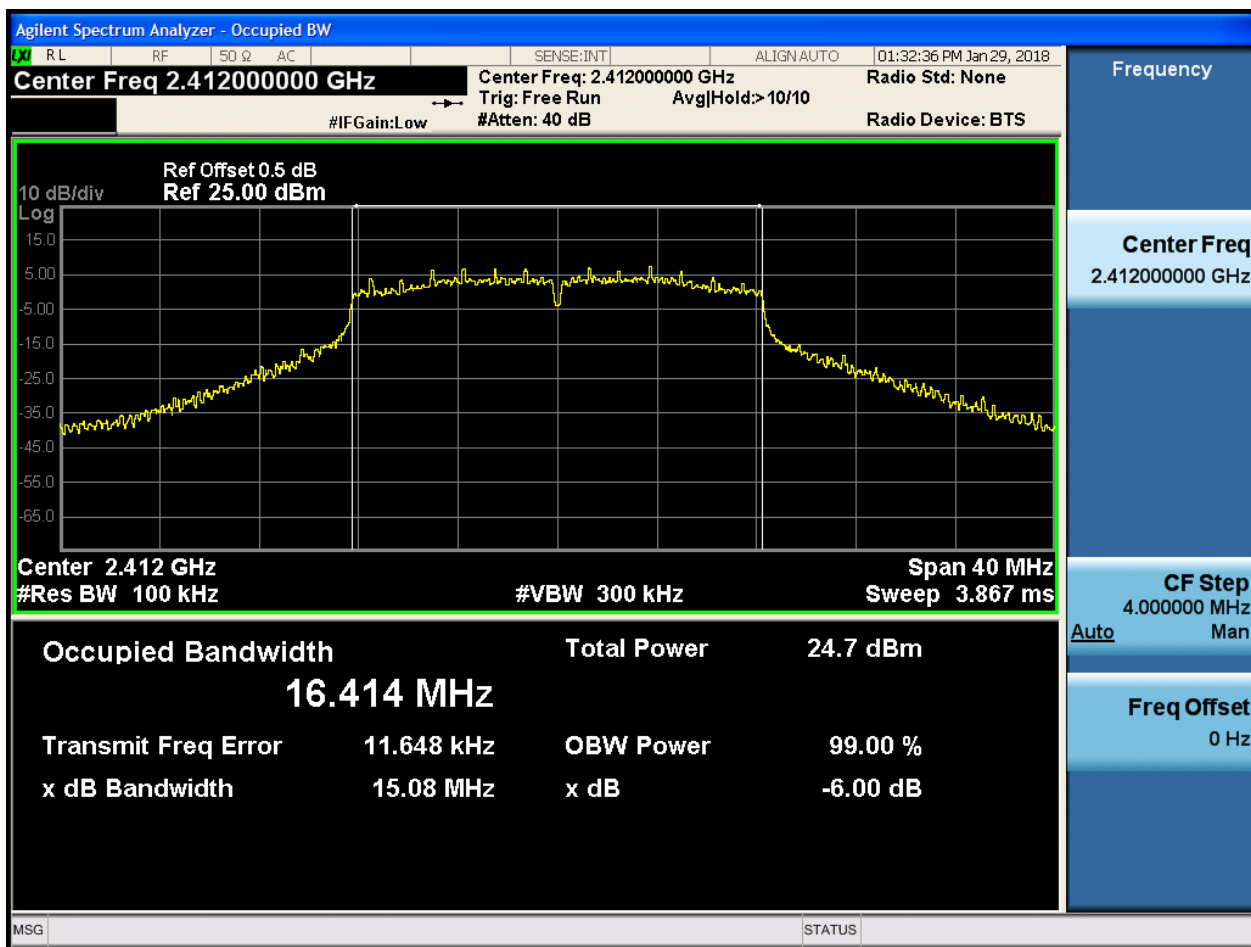


2.9 11G_L@Ant 1



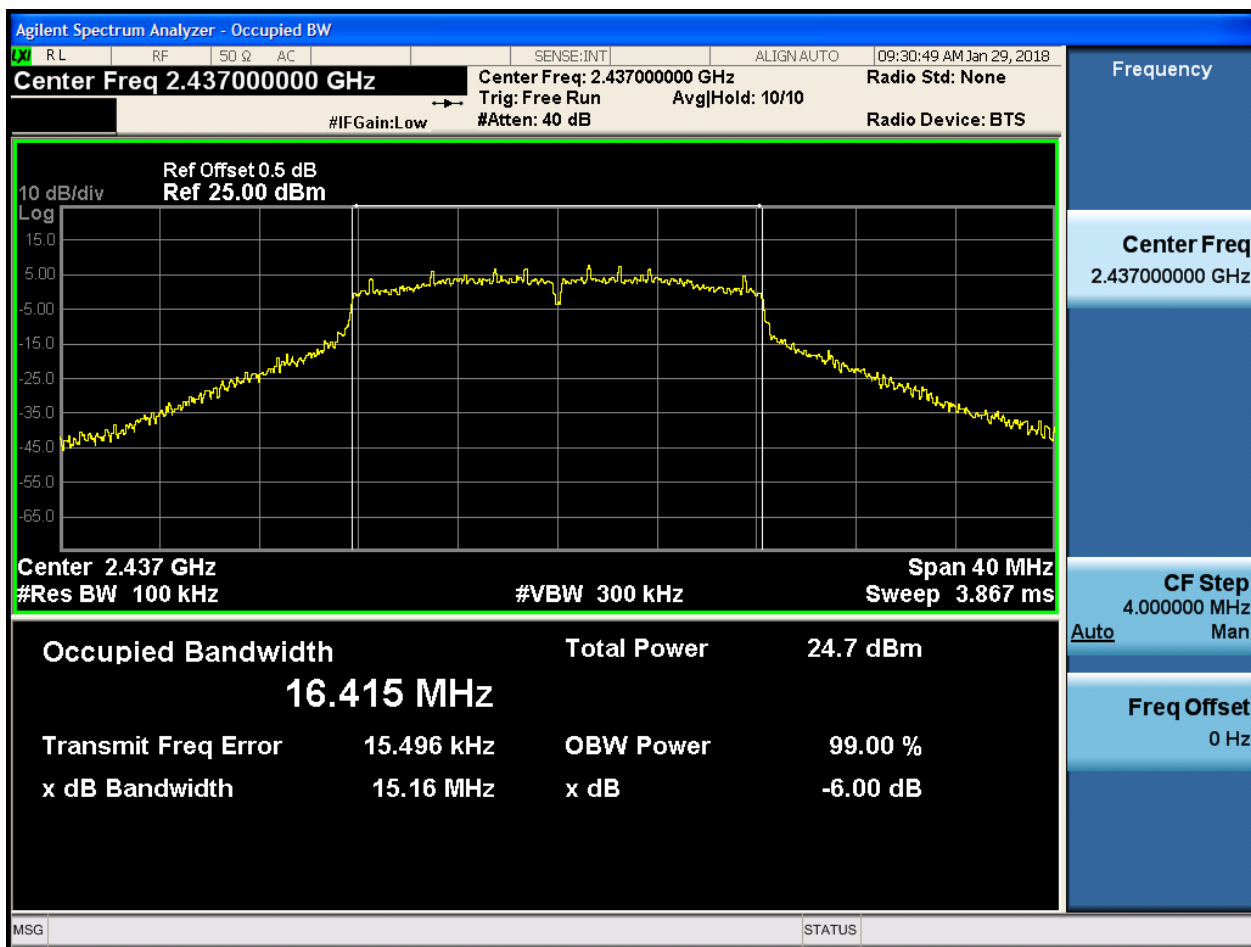


2.10 11G_L@Ant 2



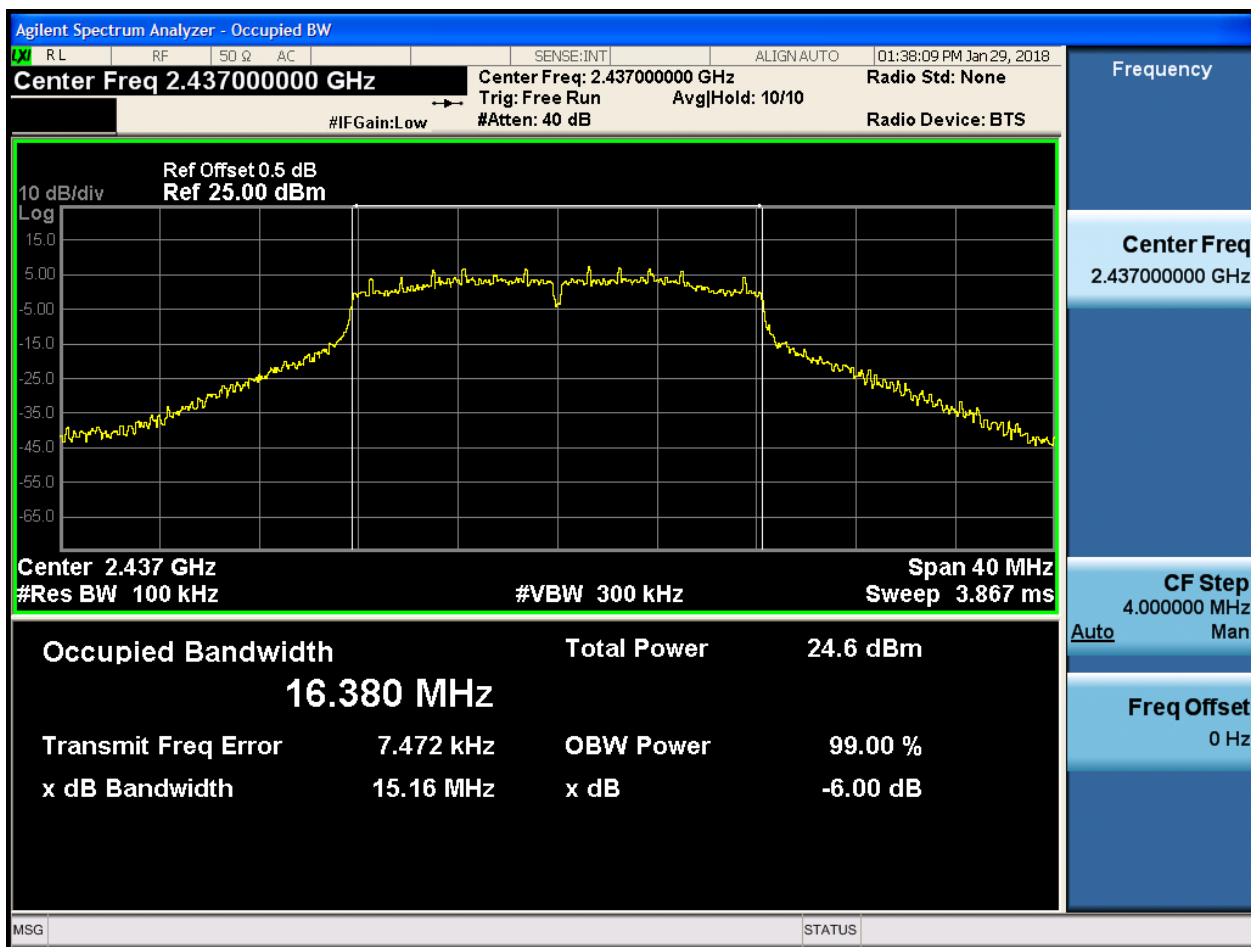


2.11 11G_M@Ant 1



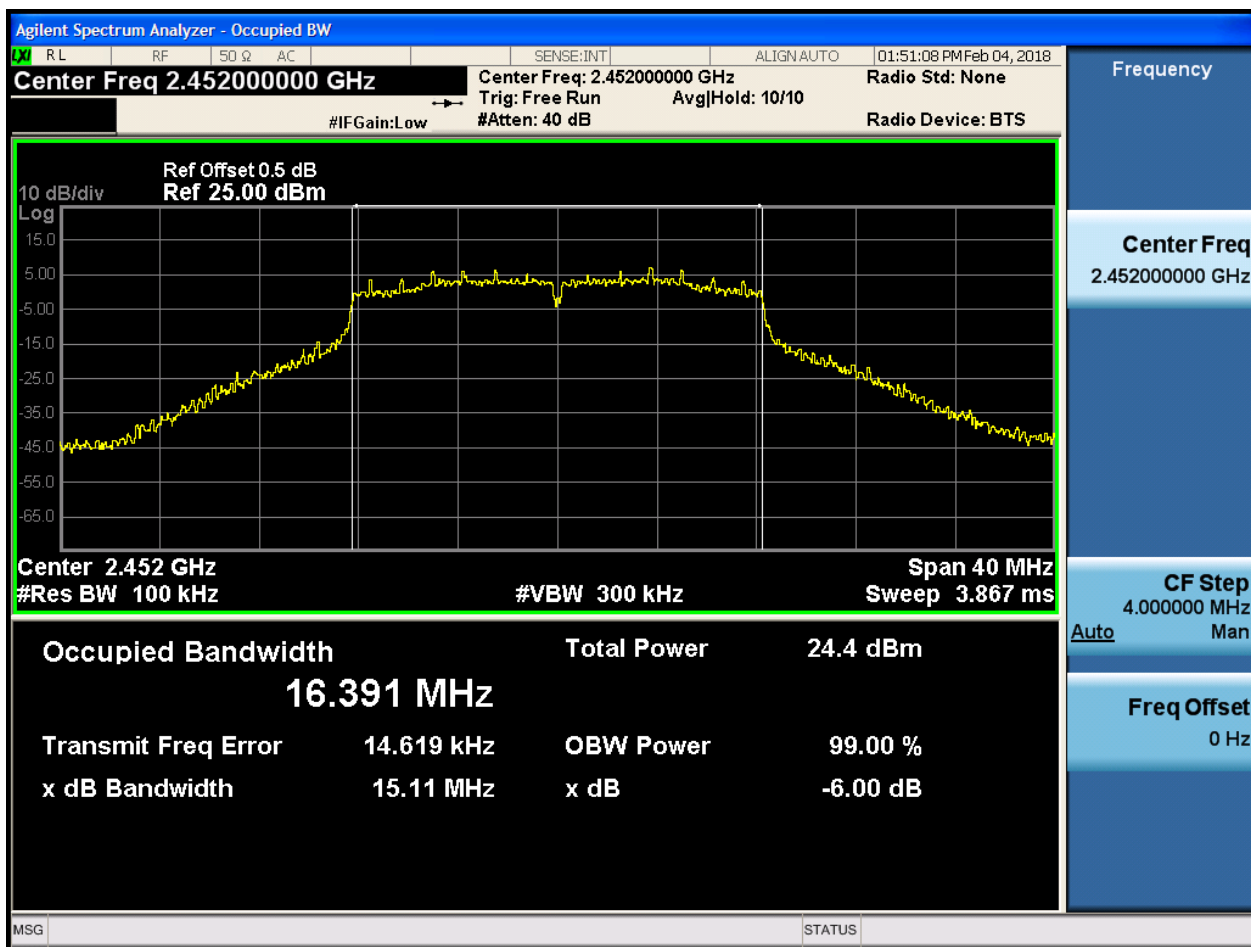


2.12 11G_M@Ant 2

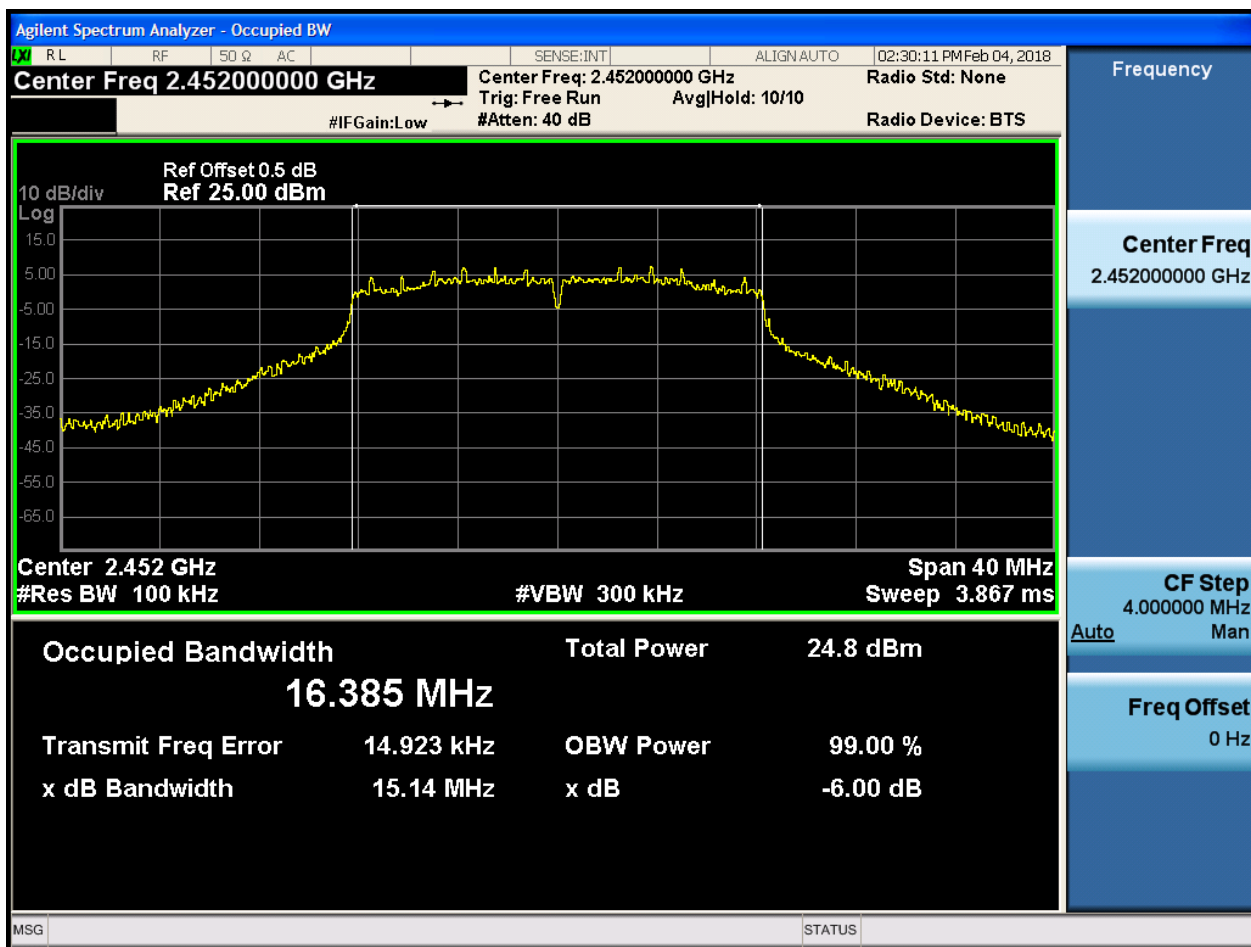




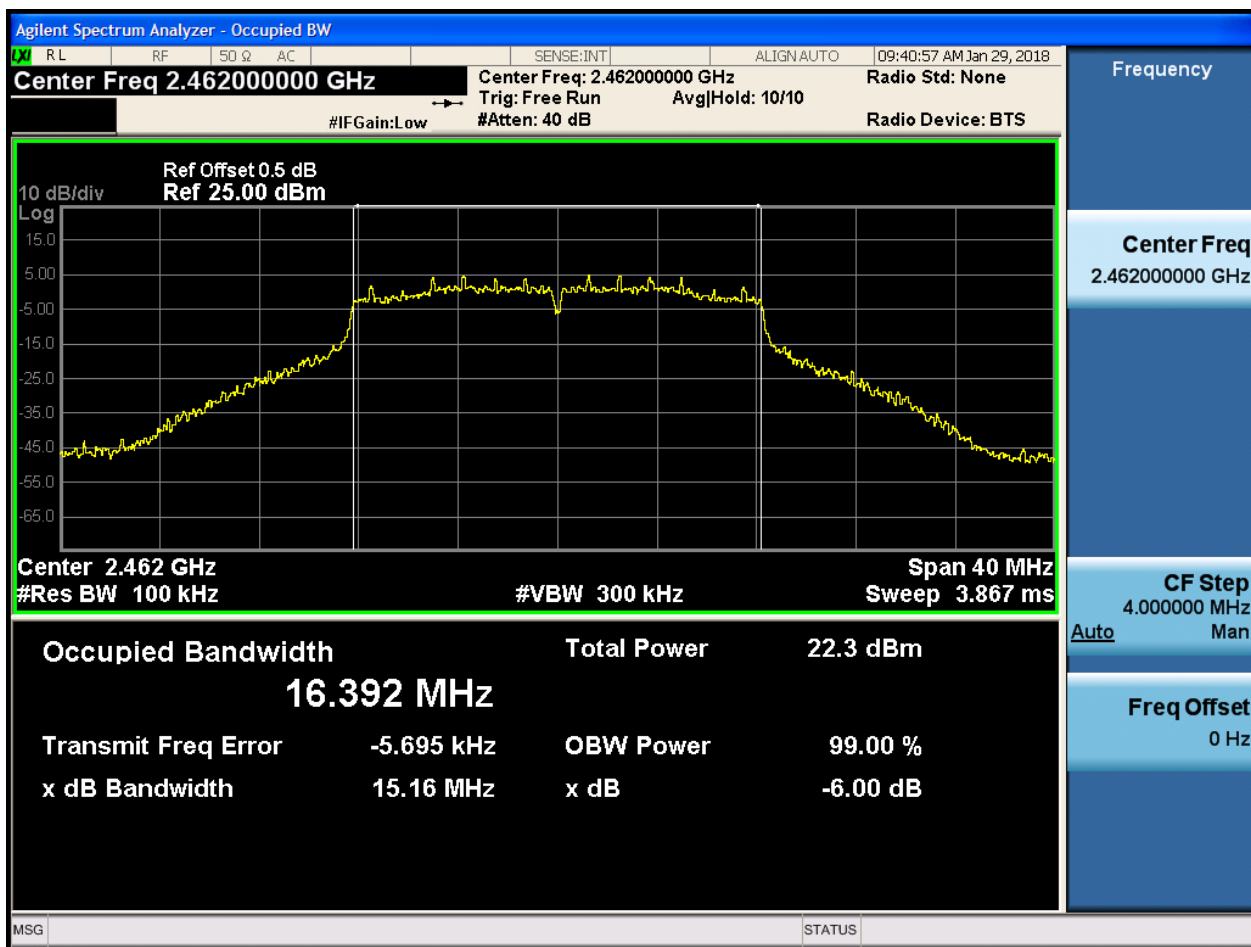
2.13 11G_H_2452@Ant 1



2.14 11G_H_2452@Ant 2

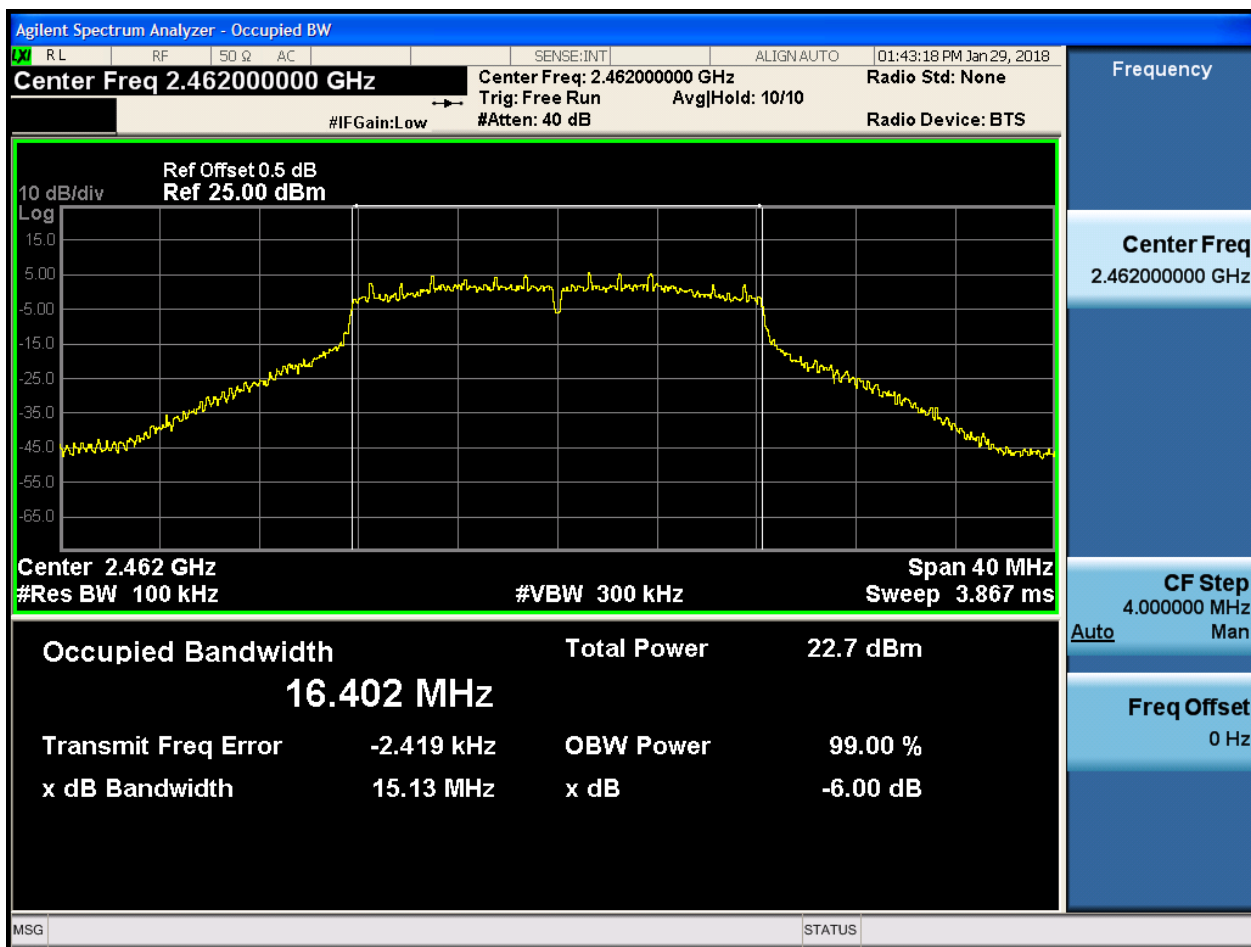


2.15 11G_H_2462@Ant 1



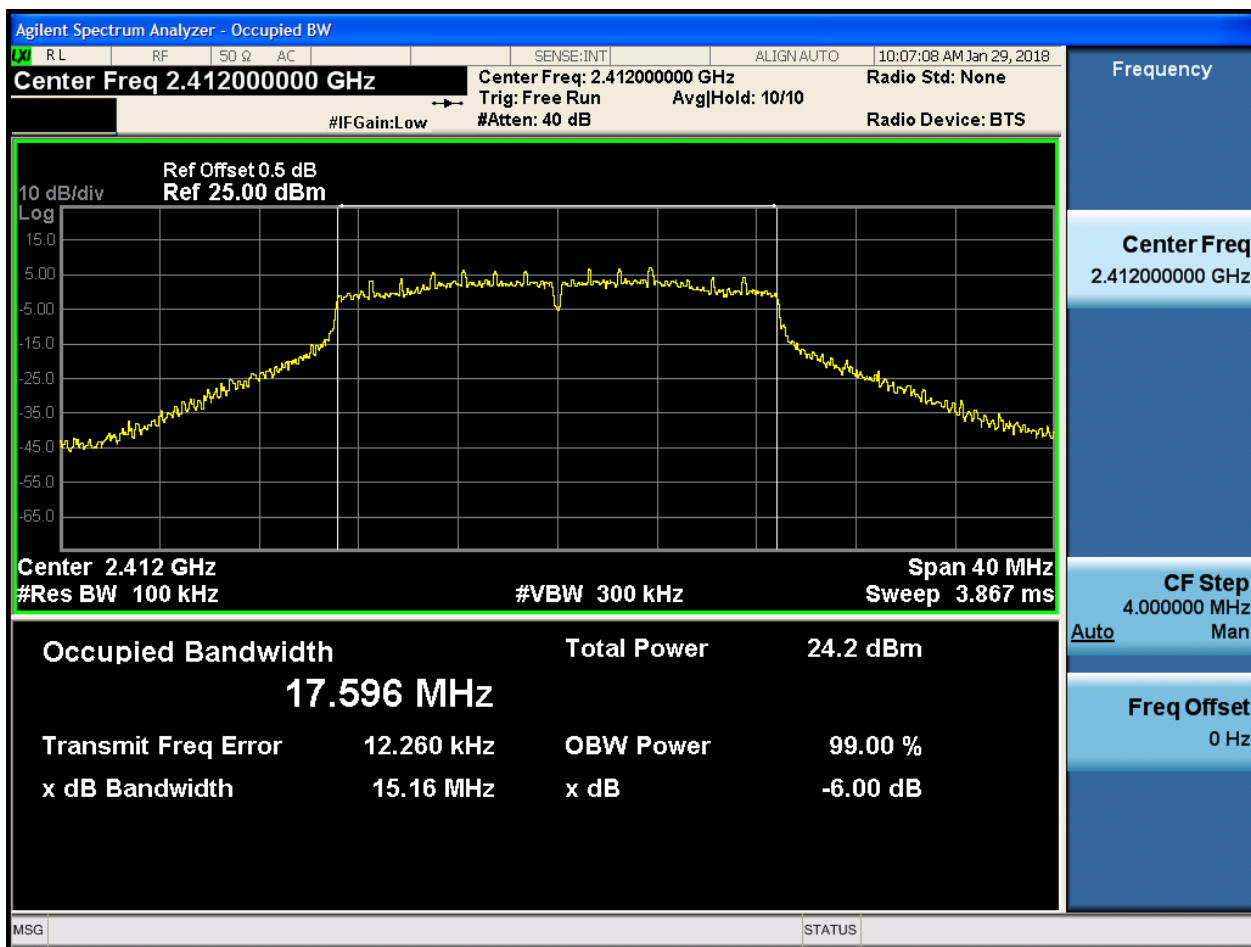


2.16 11G_H_2462@Ant 2



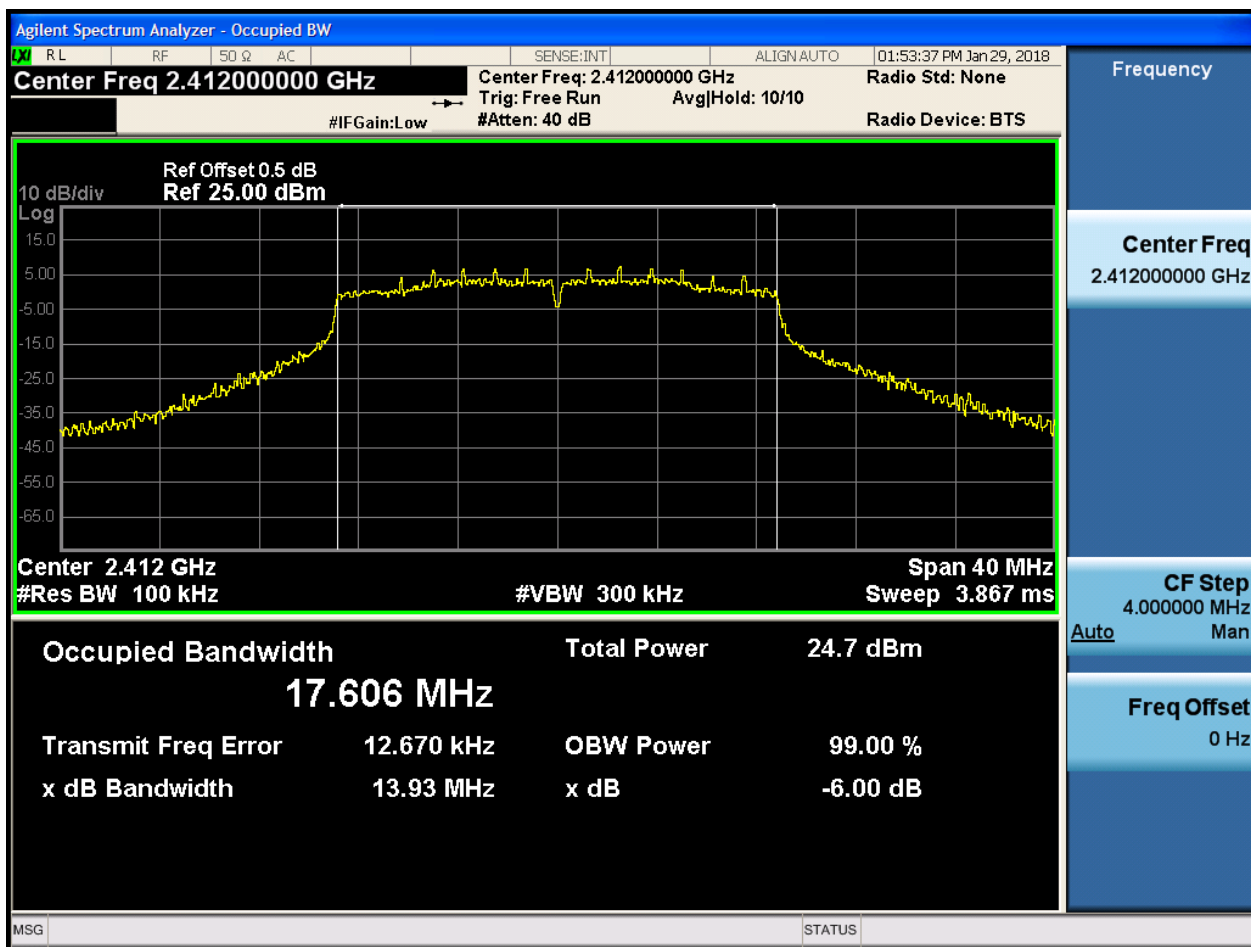


2.17 11N20_L@Ant 1



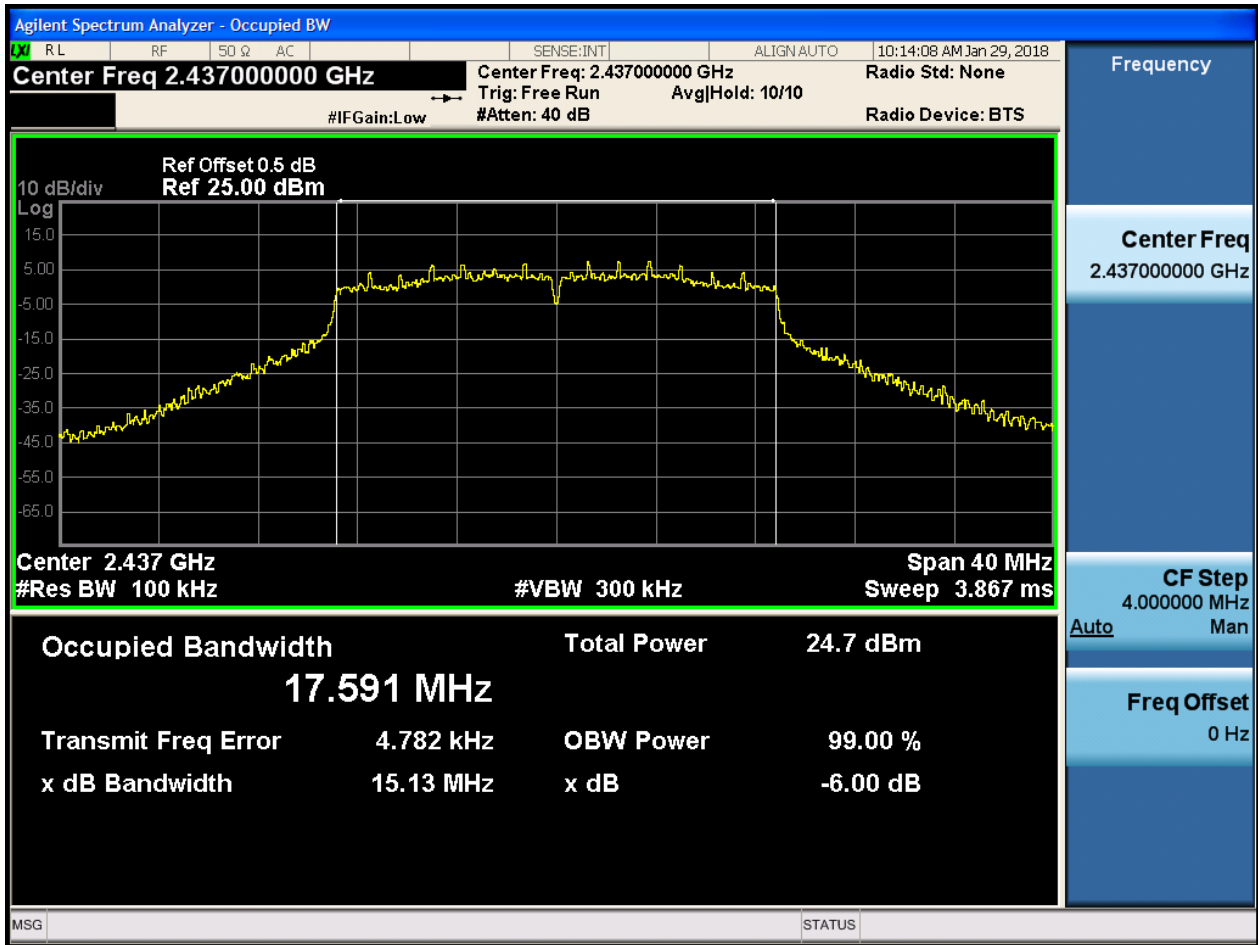


2.18 11N20_L@Ant 2



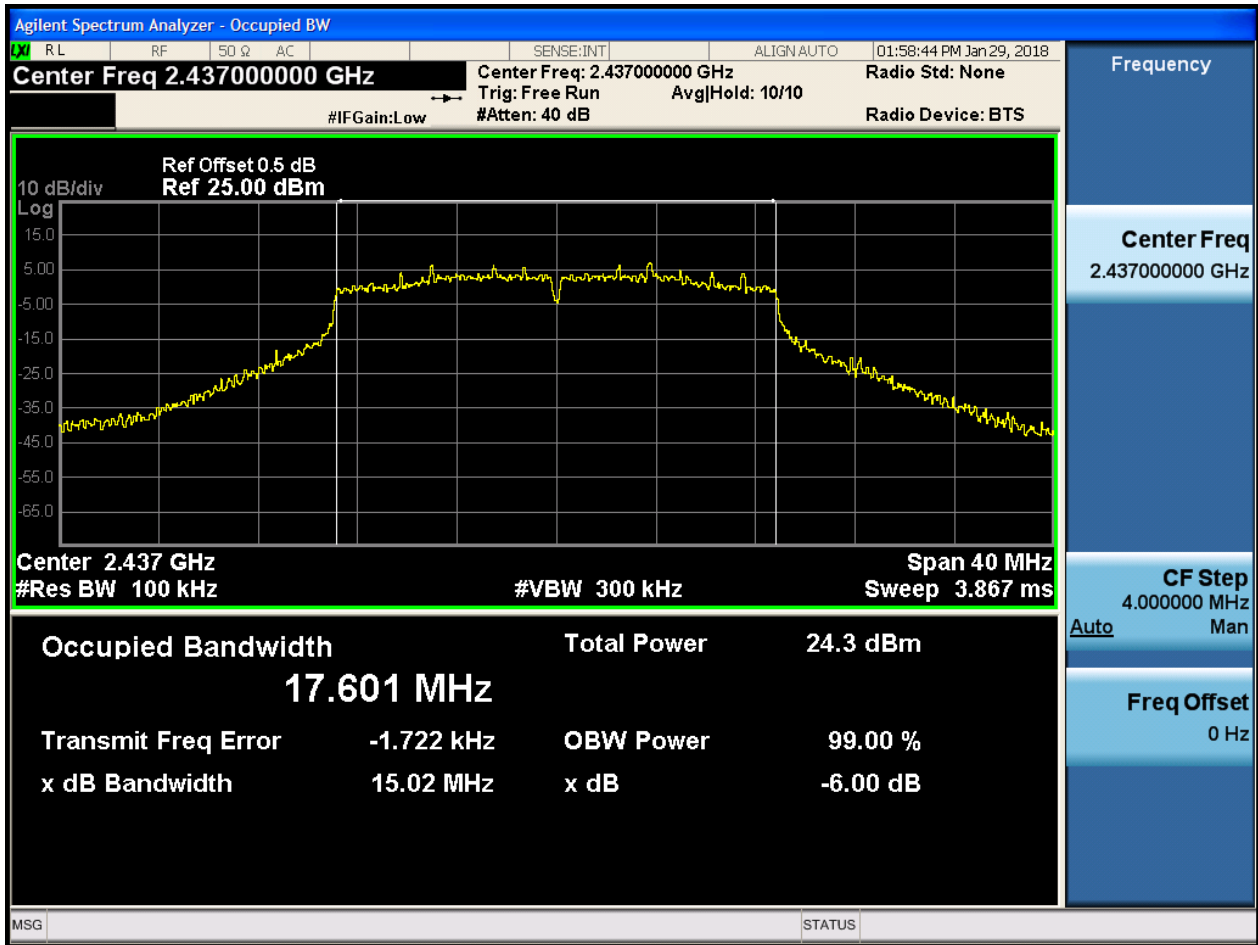


2.19 11N20_M@Ant 1



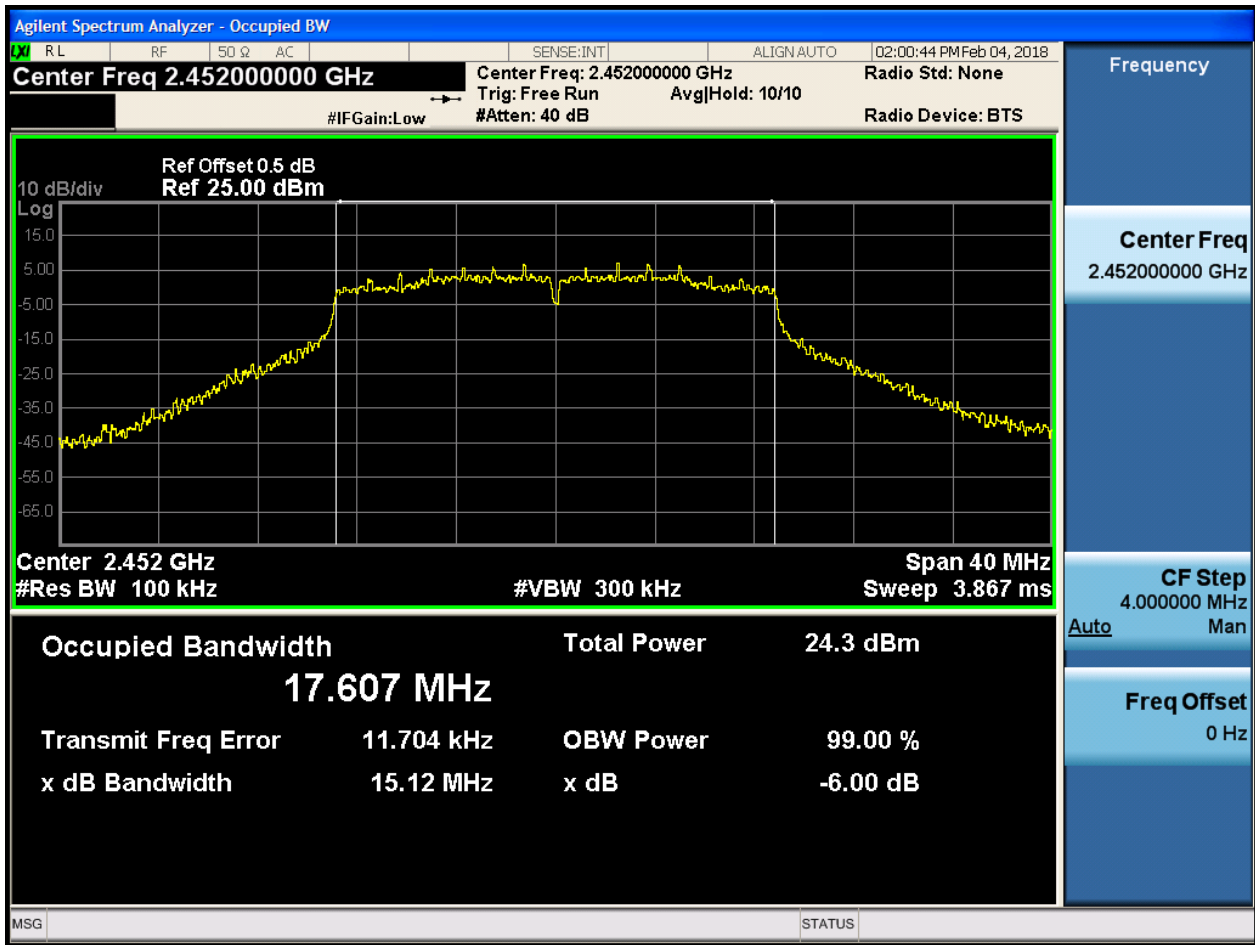


2.20 11N20_M@Ant 2

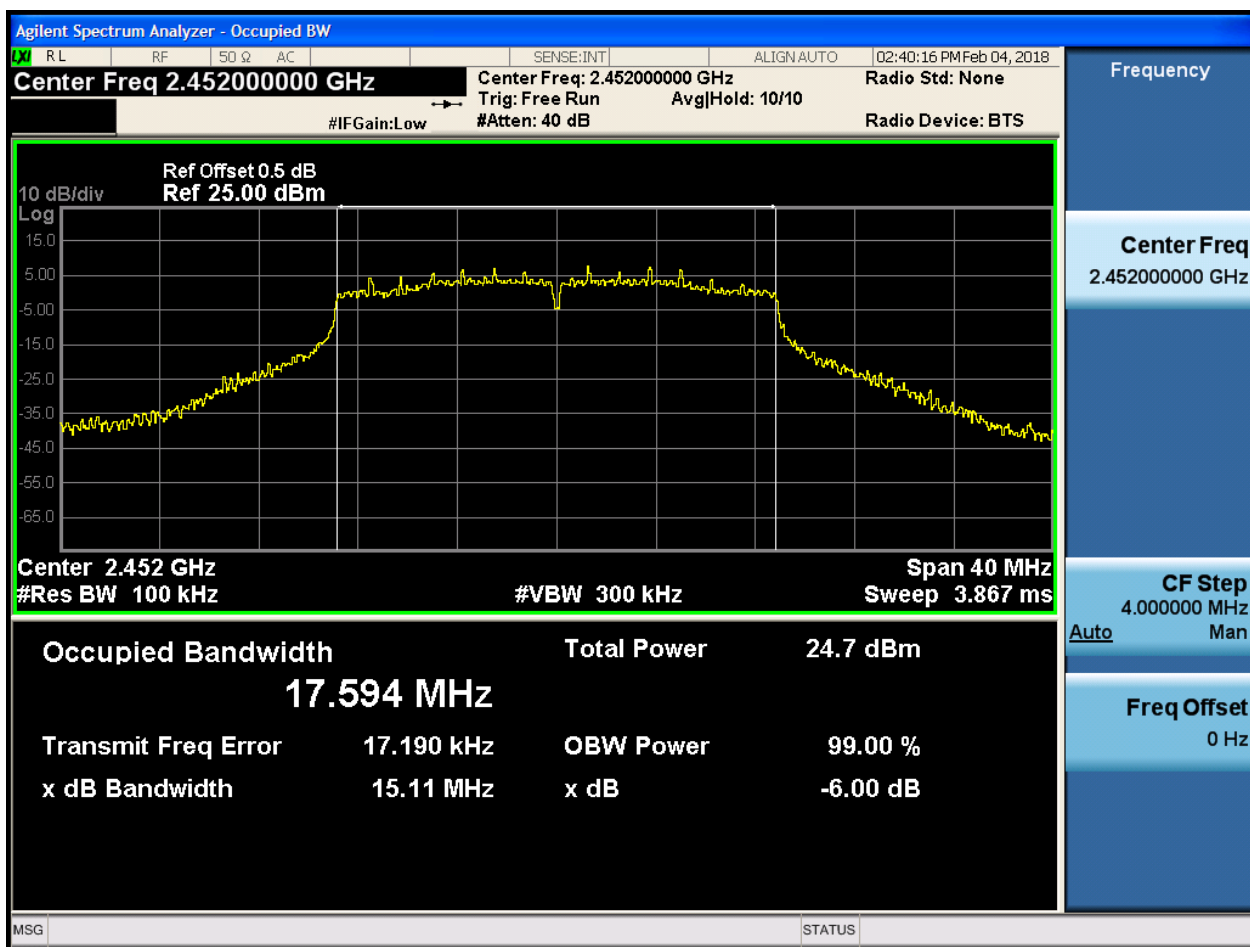




2.21 11N20_H_2452@Ant 1

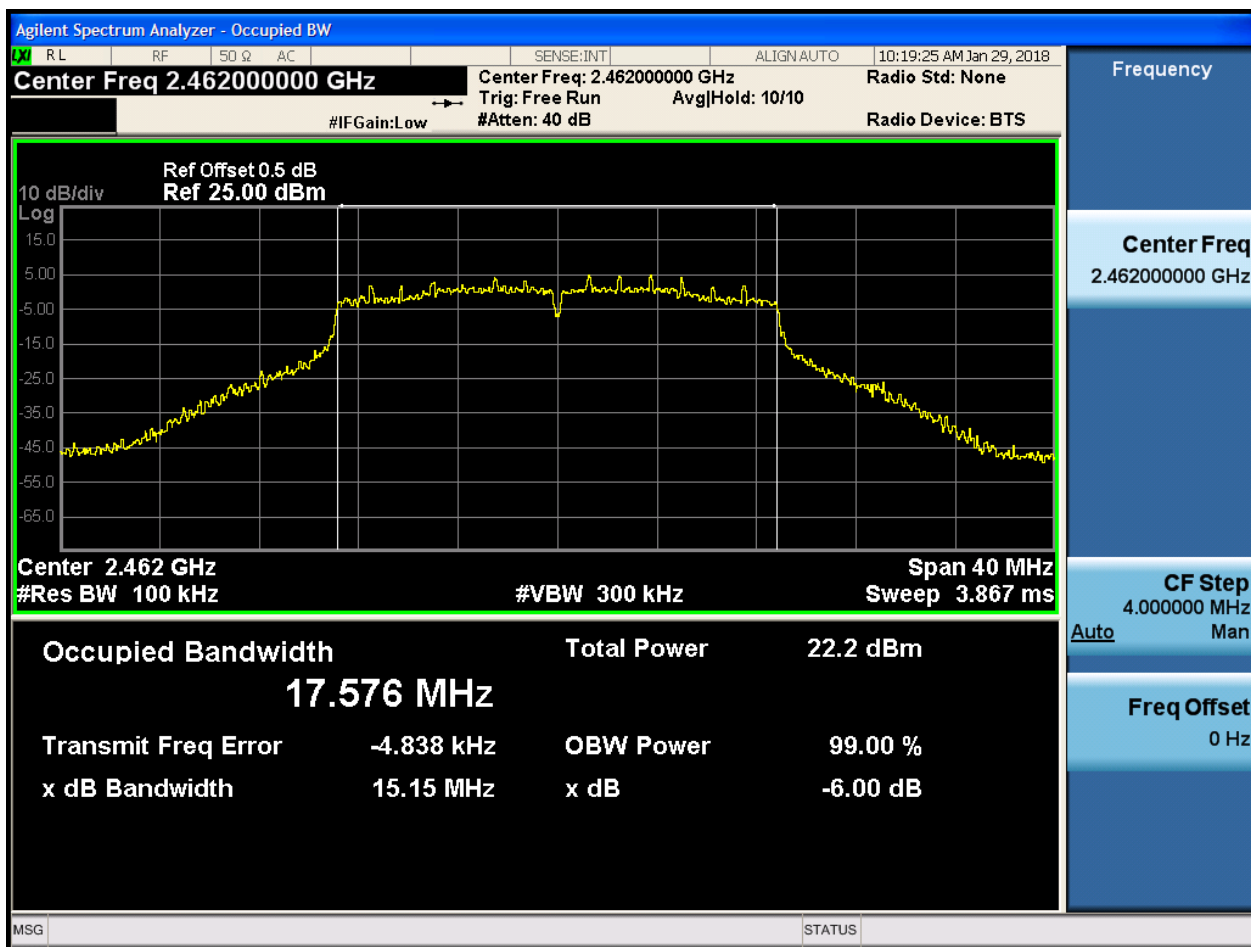


2.22 11N20_H_2452@Ant 2



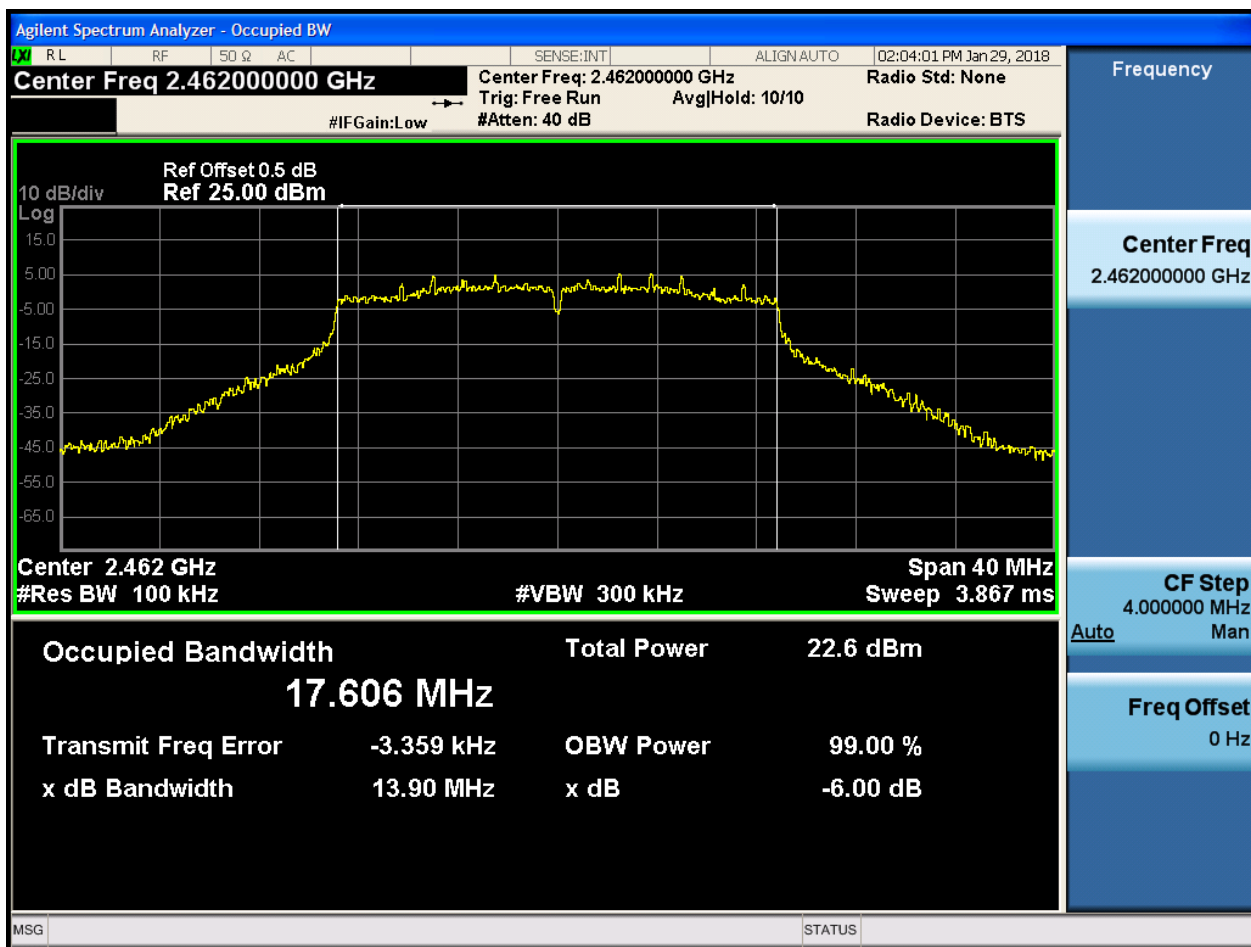


2.23 11N20_H_2462@Ant 1



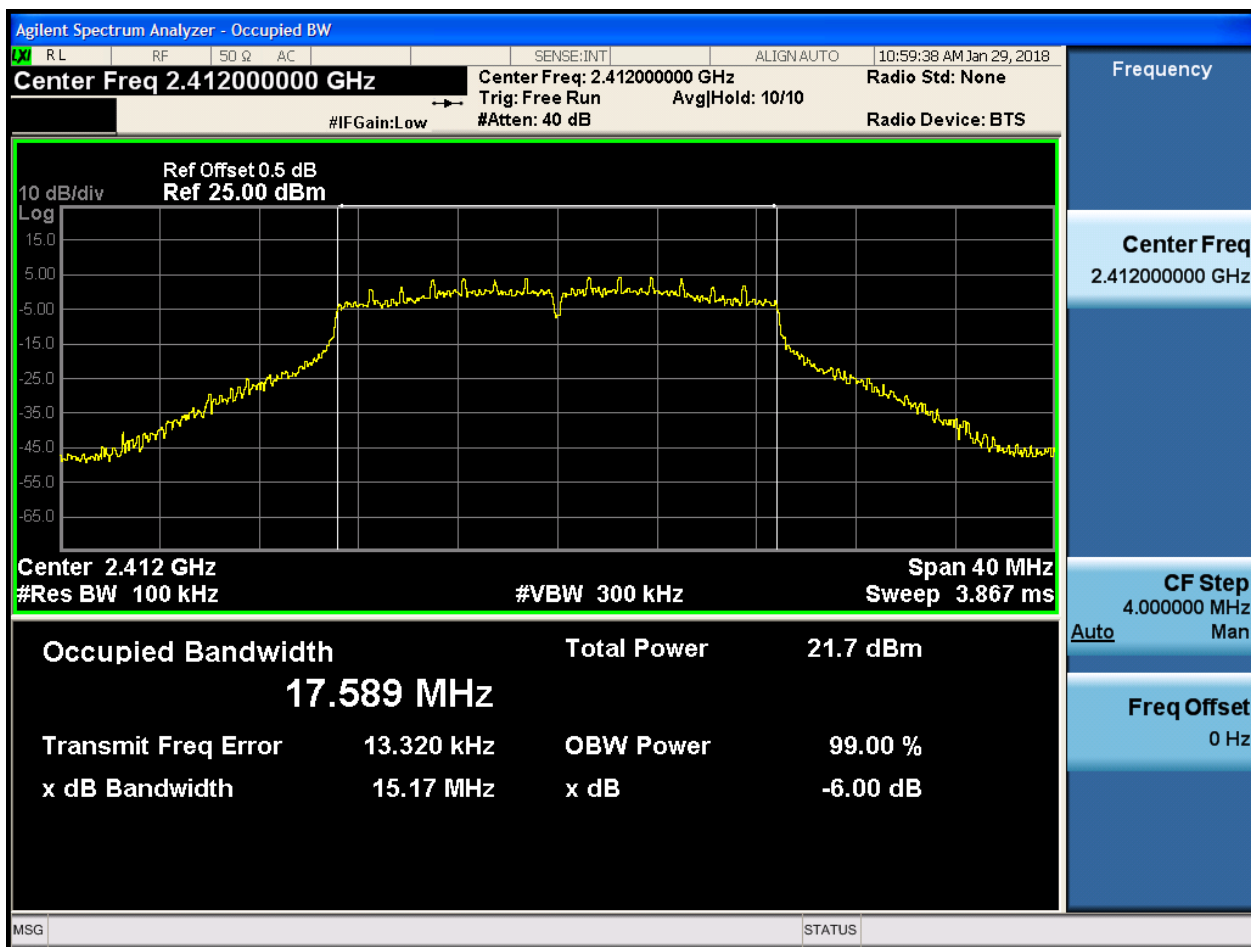


2.24 11N20_H_2462@Ant 2



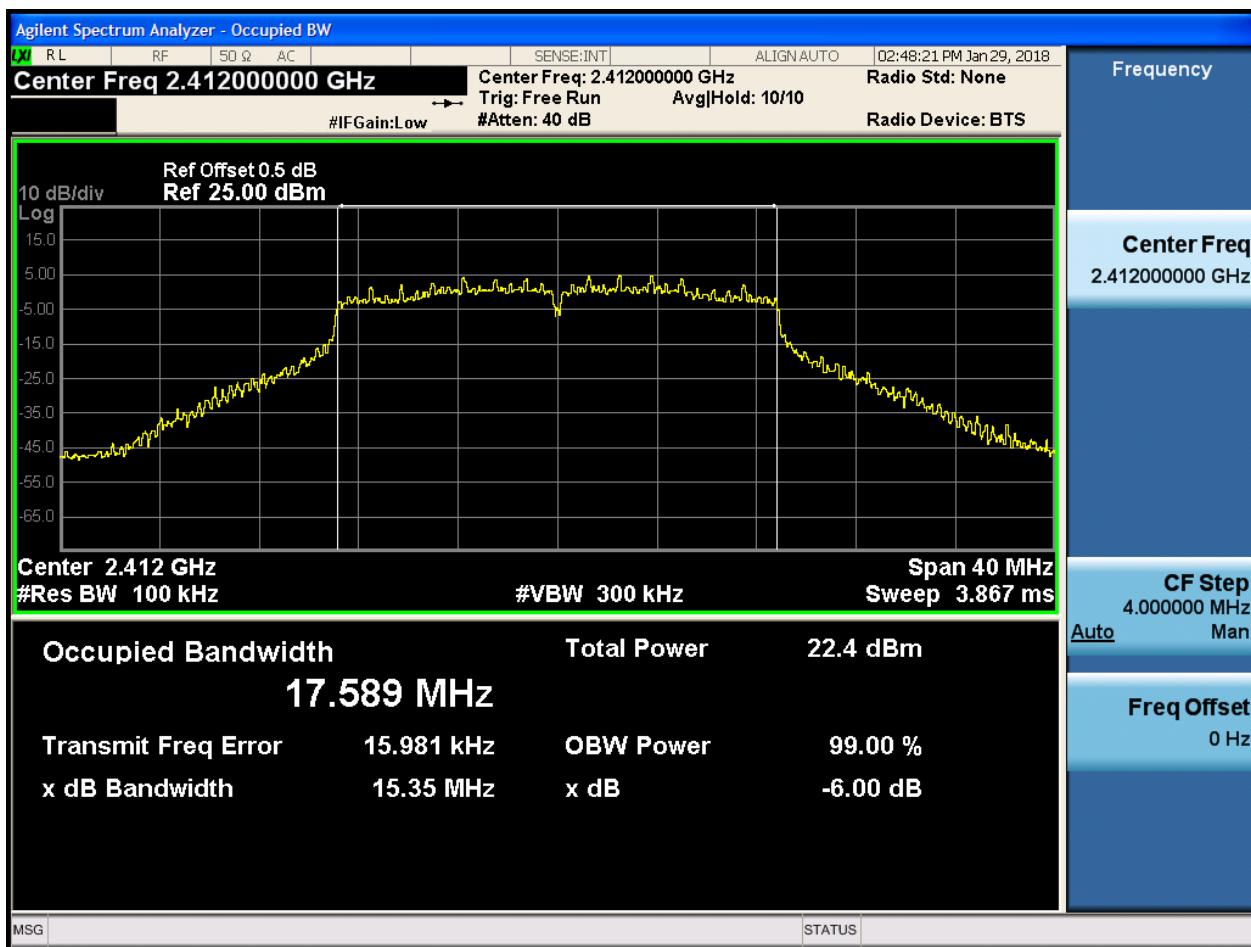


2.25 11N20m_L@Ant 1



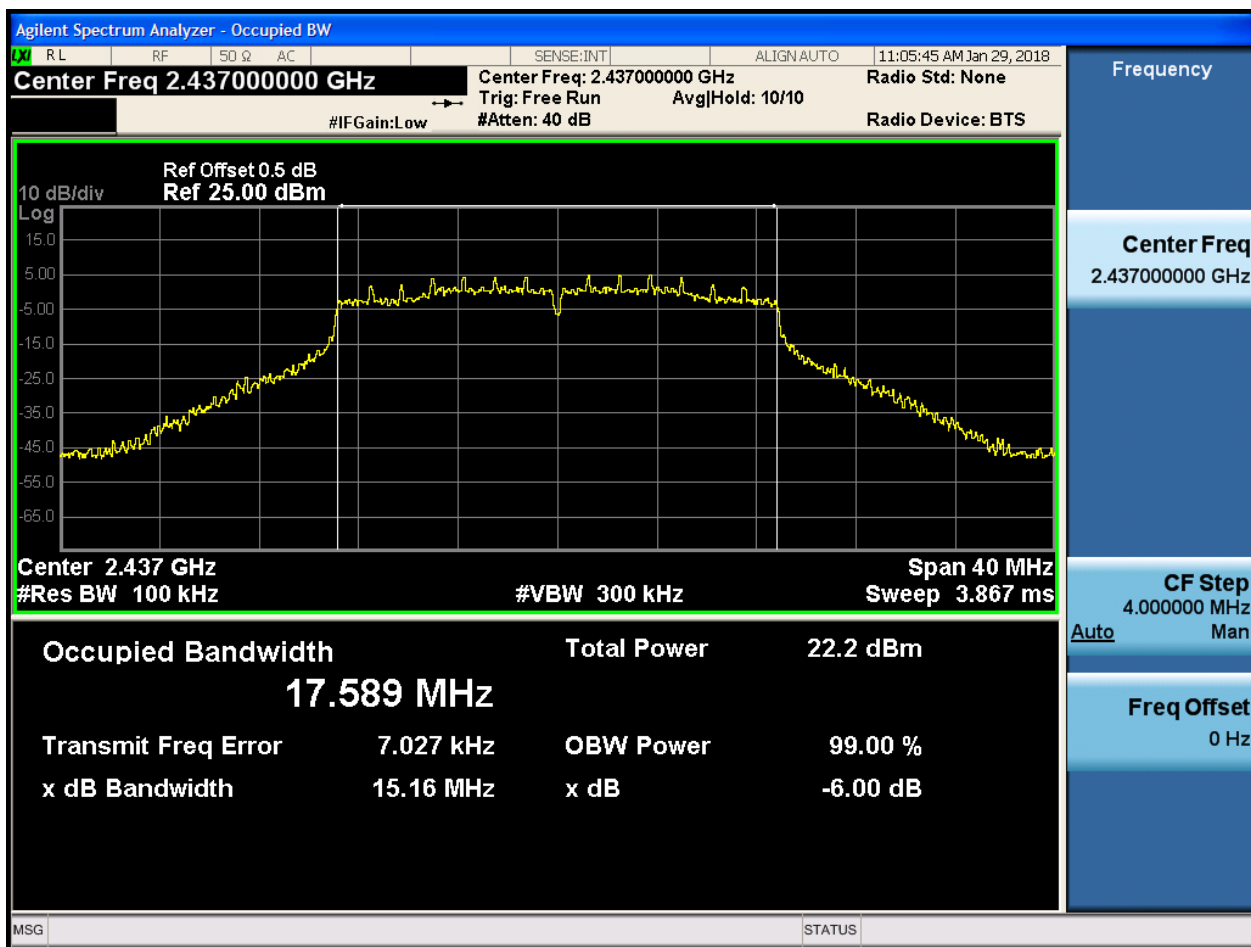


2.26 11N20m_L@Ant 2



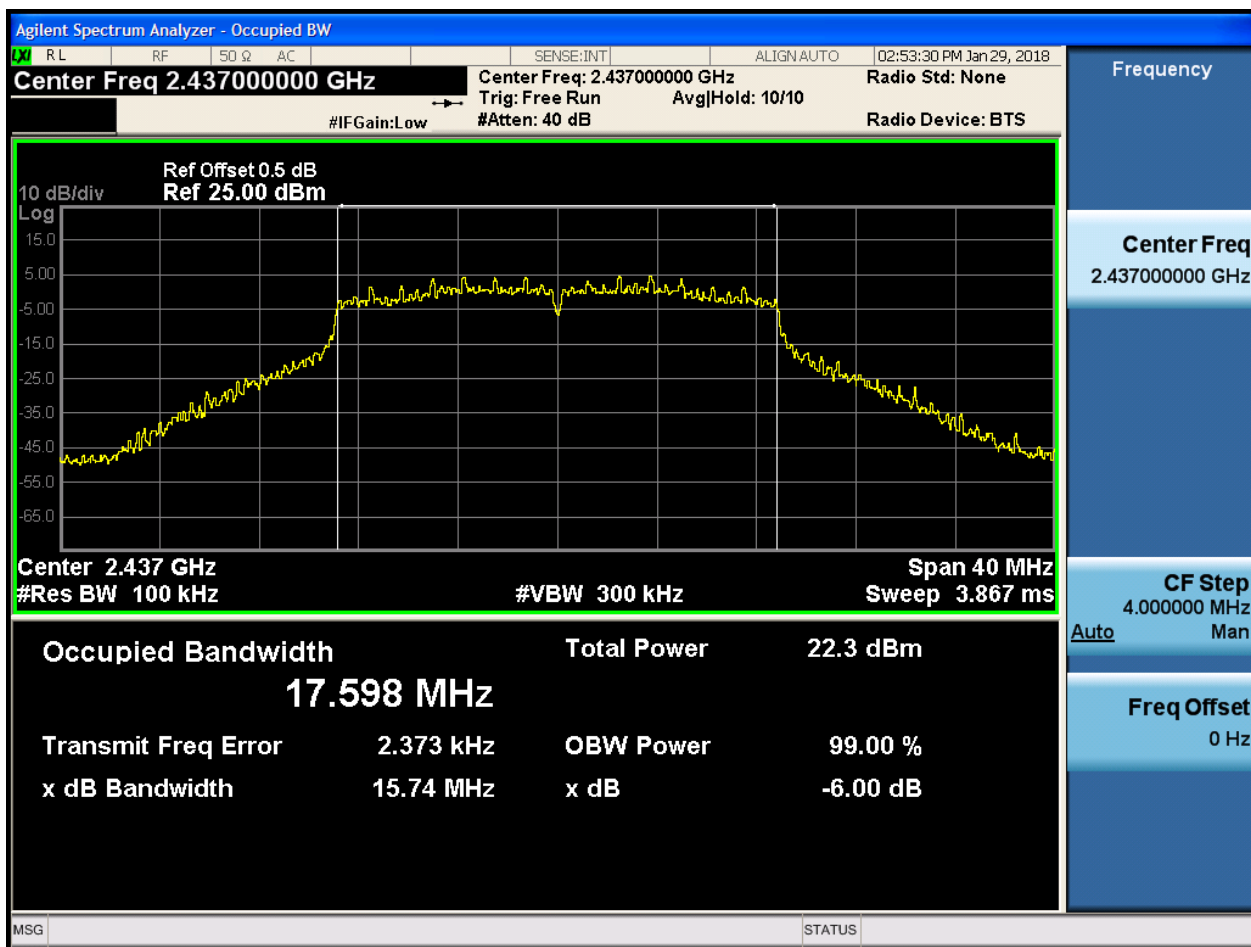


2.27 11N20m_M@Ant 1



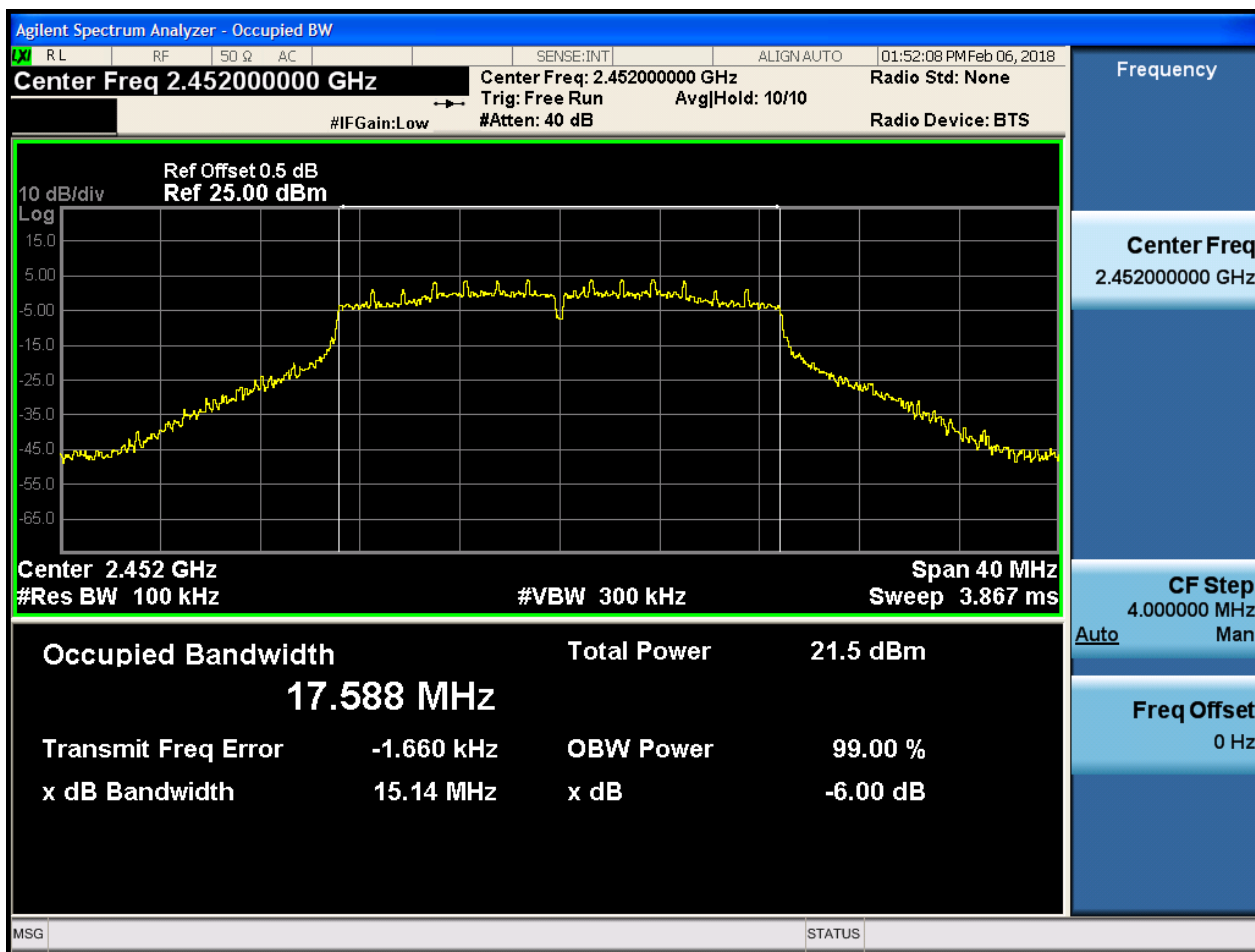


2.28 11N20m_M@Ant 2

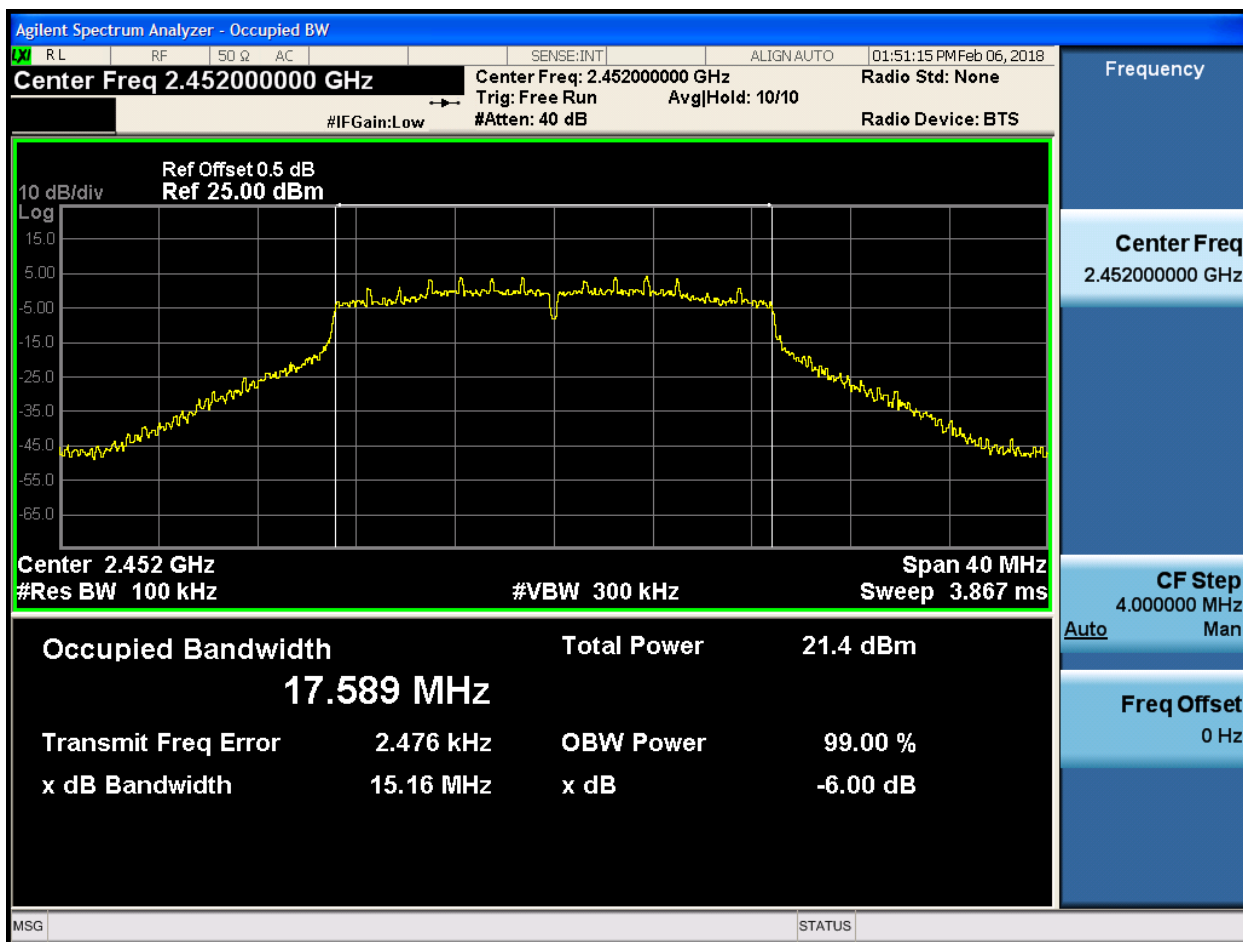




2.29 11N20m_H_2452@Ant 1

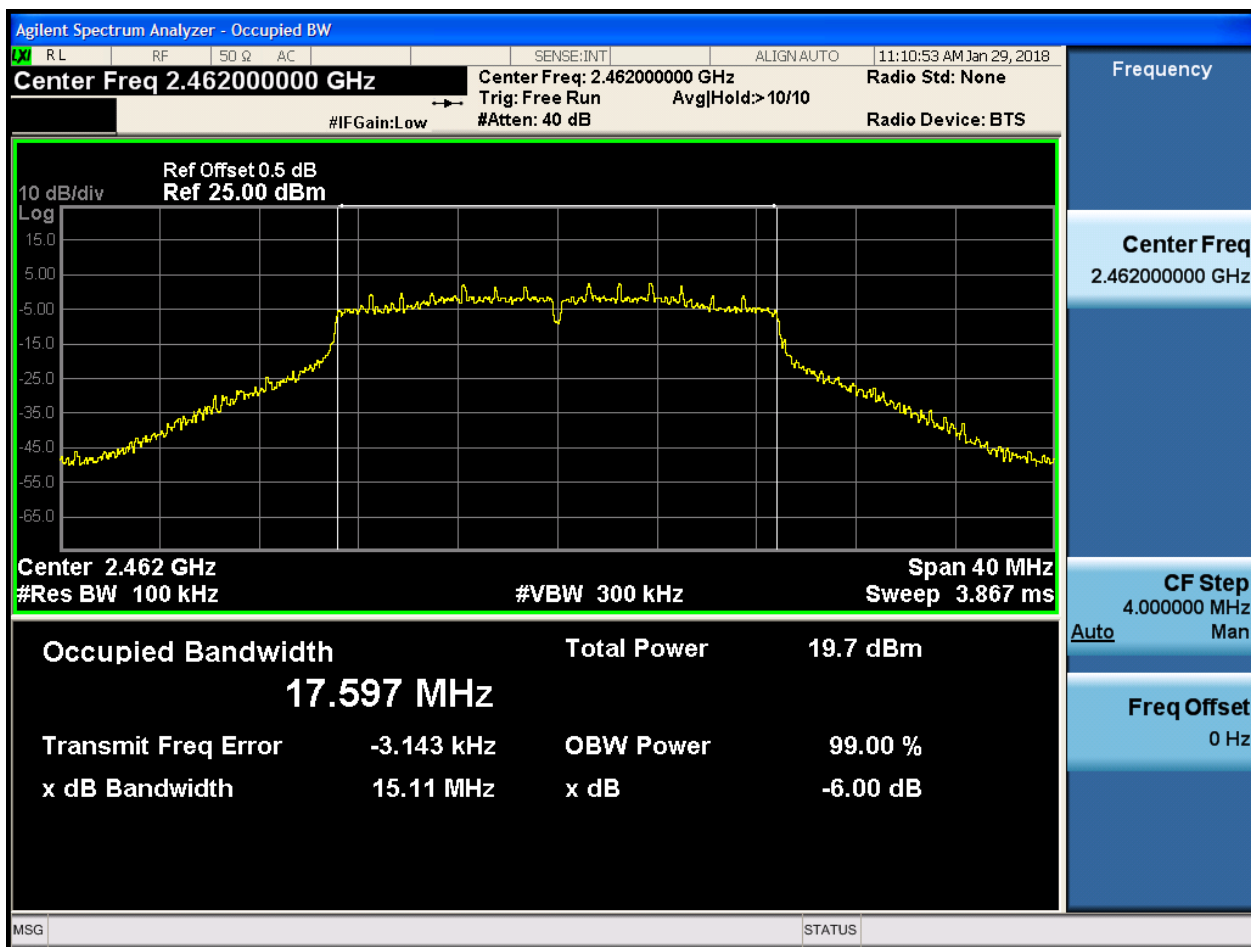


2.30 11N20m_H_2452@Ant 2



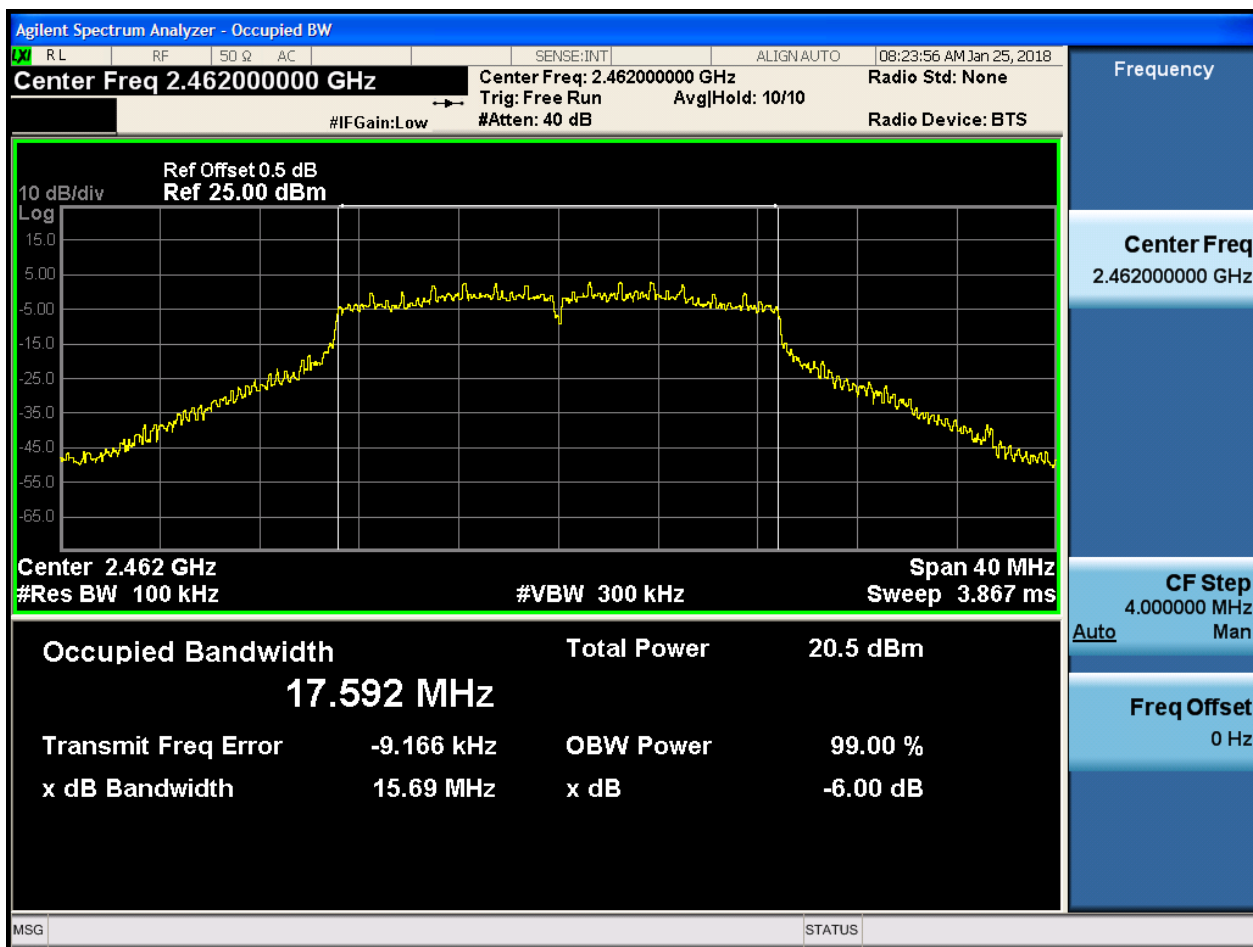


2.31 11N20m_H_2462@Ant 1



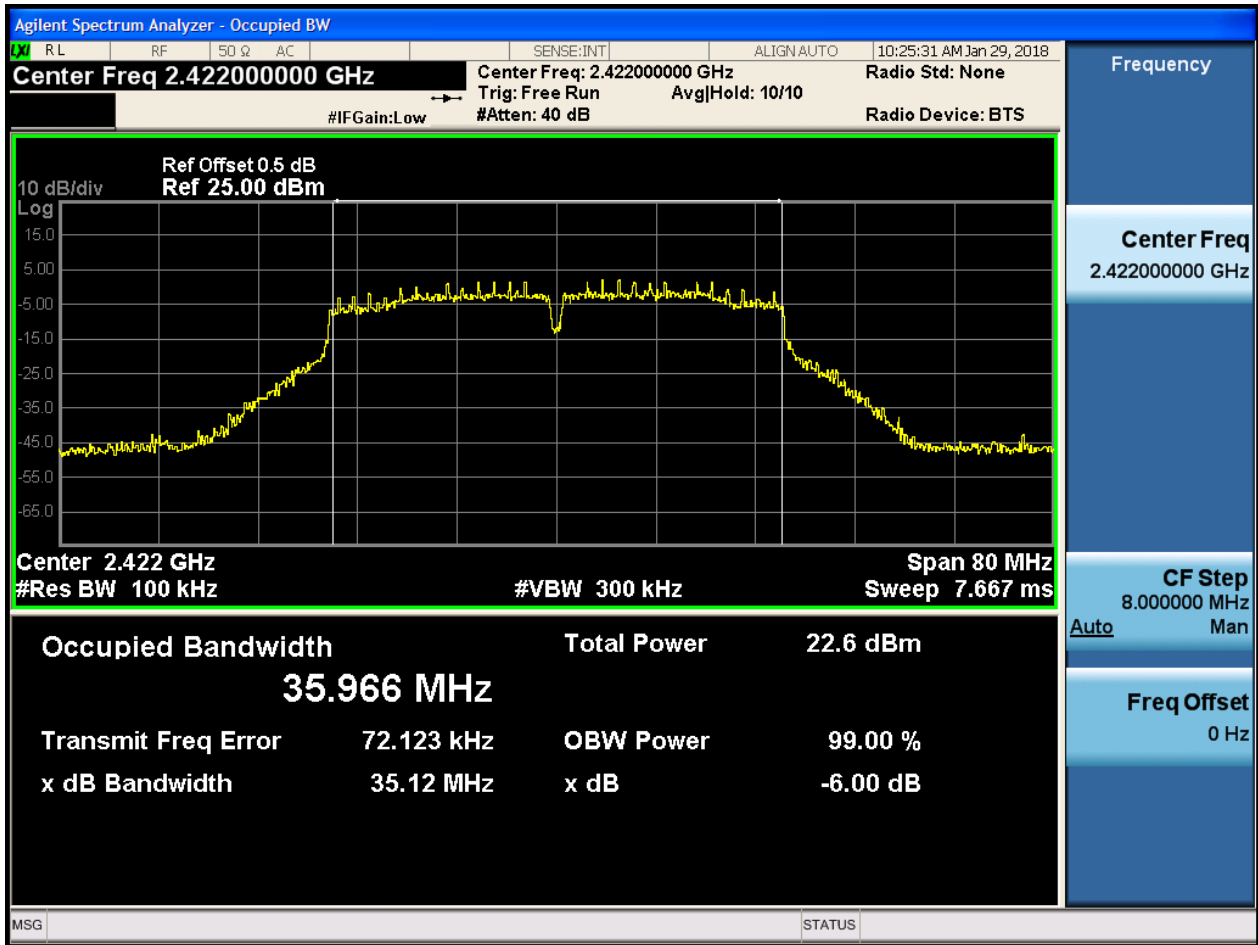


2.32 11N20m_H_2462@Ant 2



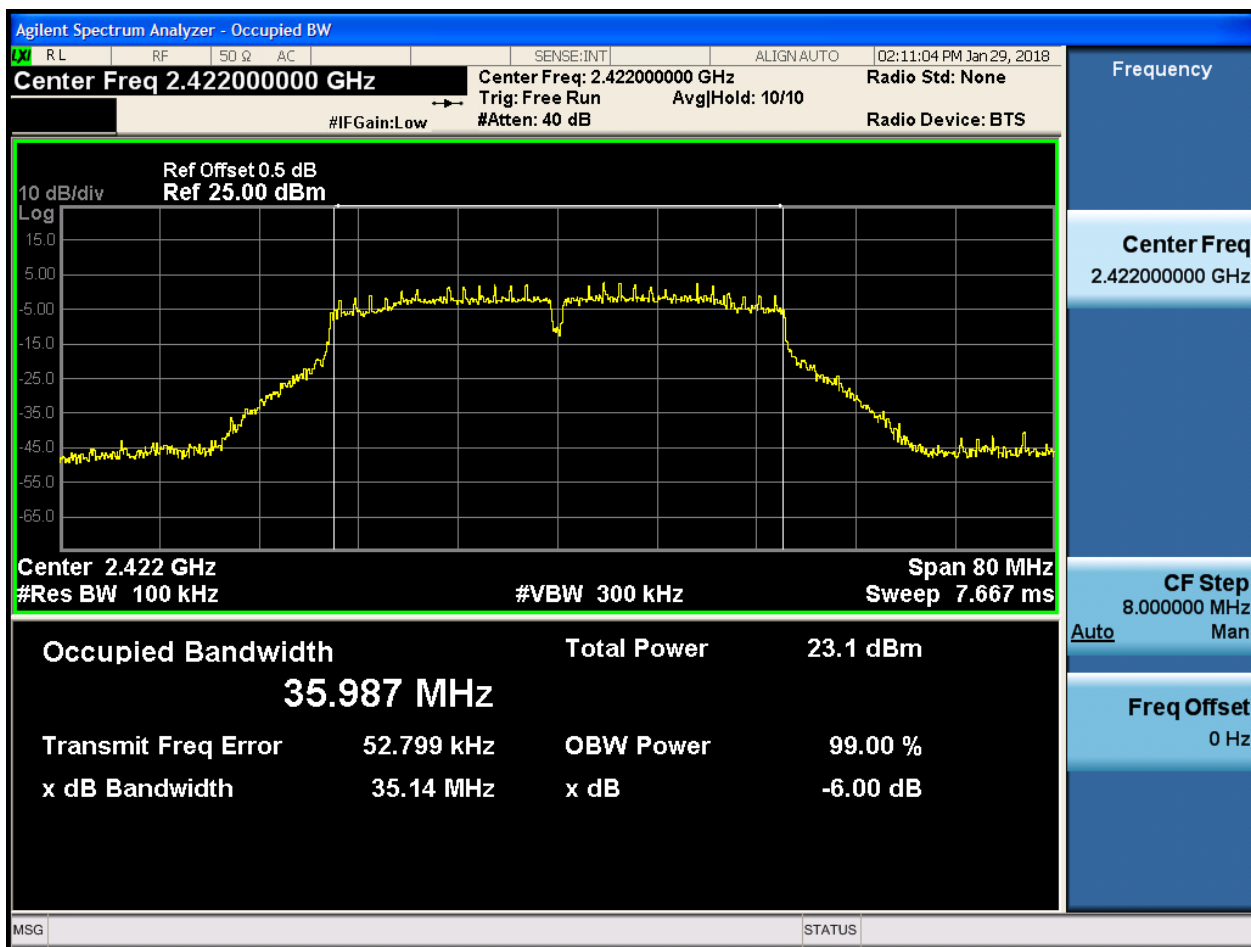


2.33 11N40_L@Ant 1



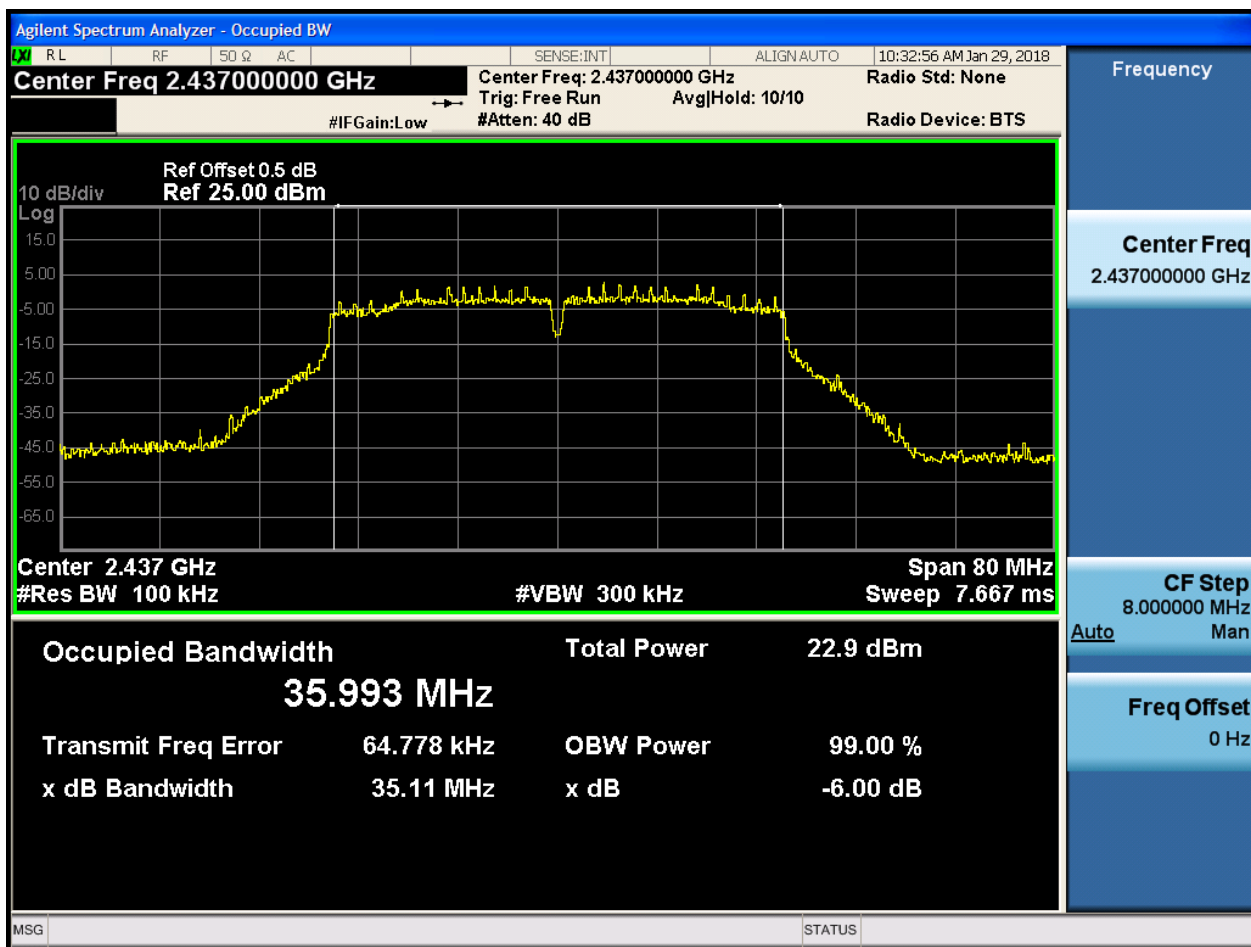


2.34 11N40_L@Ant 2



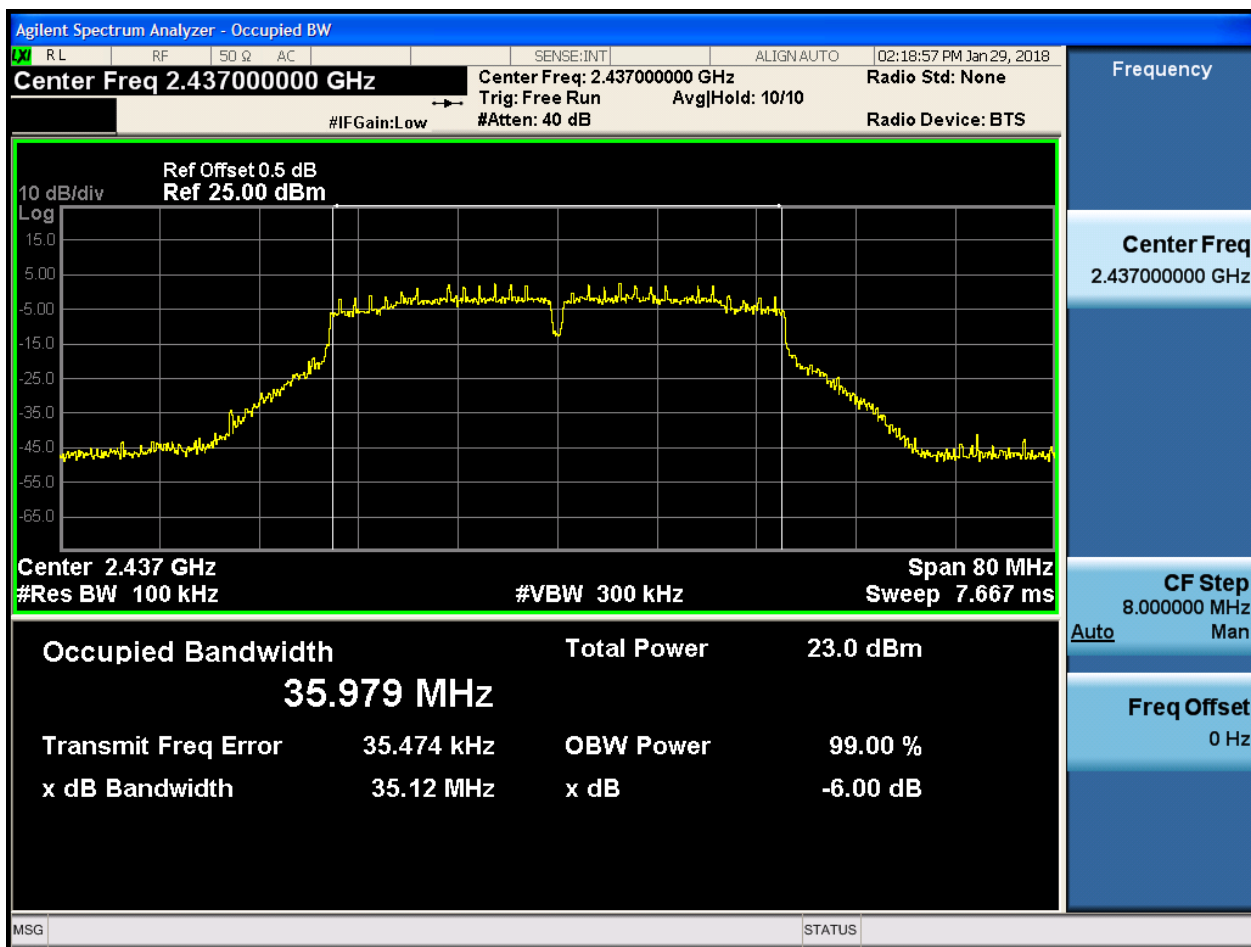


2.35 11N40_M@Ant 1



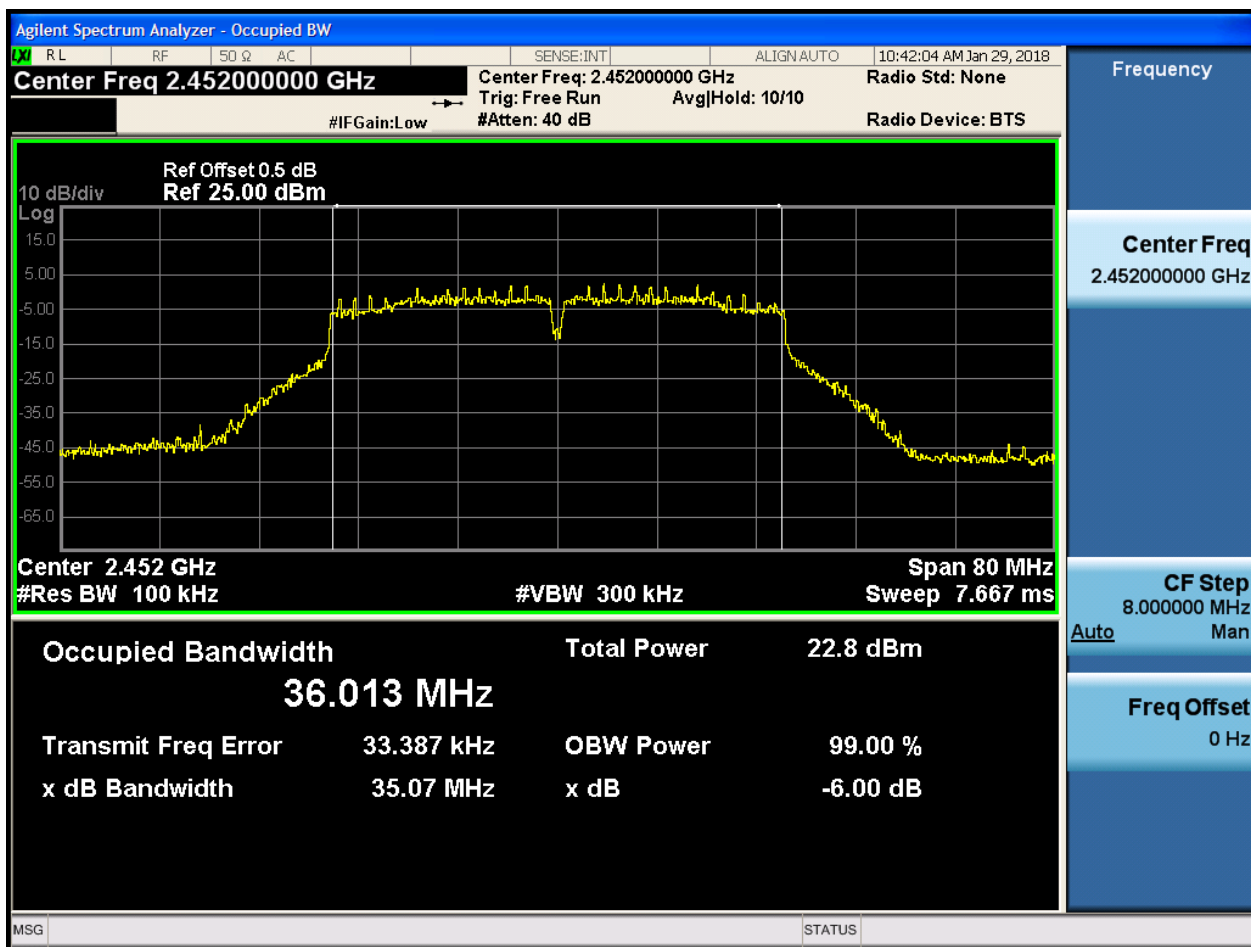


2.36 11N40_M@Ant 2



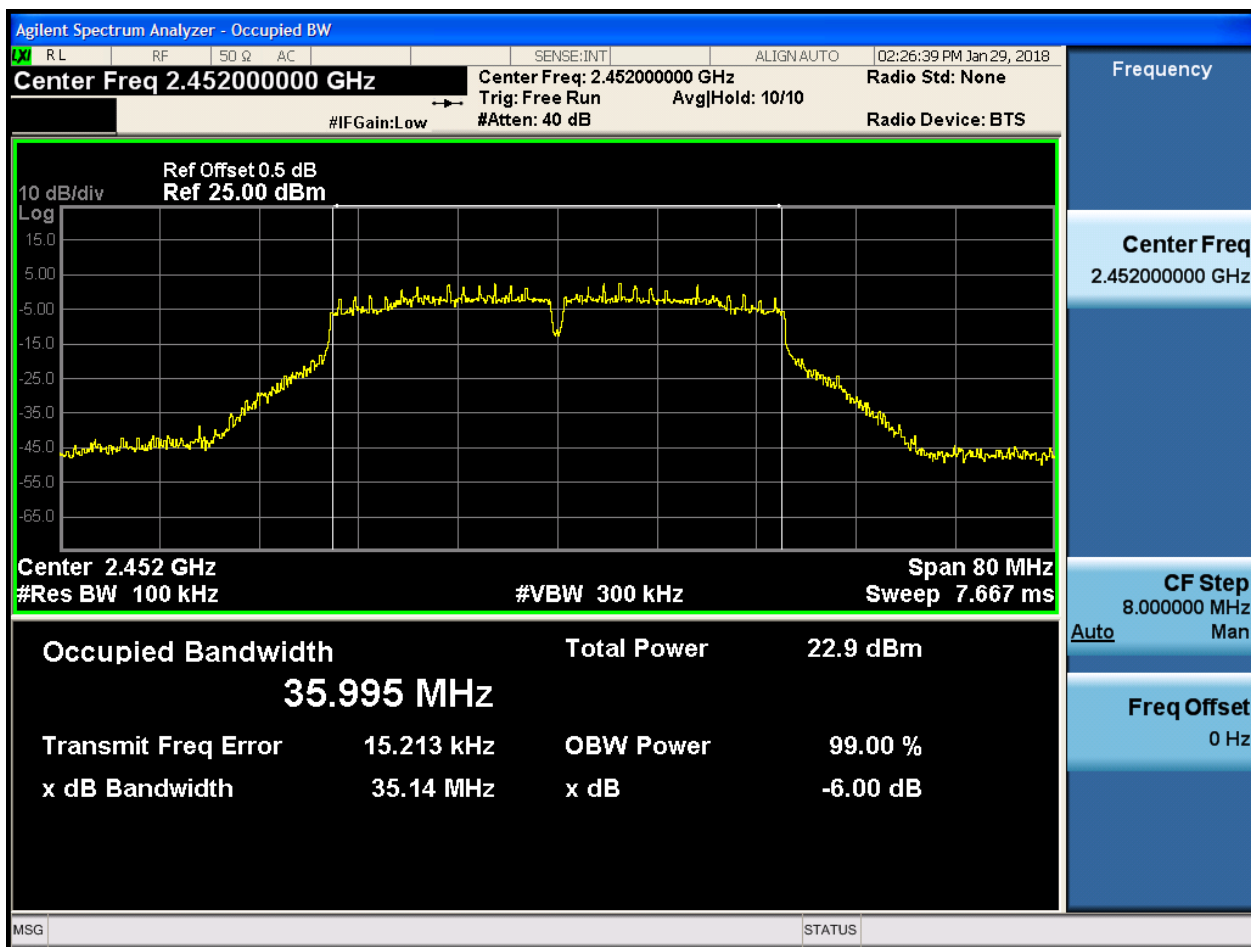


2.37 11N40_H@Ant 1



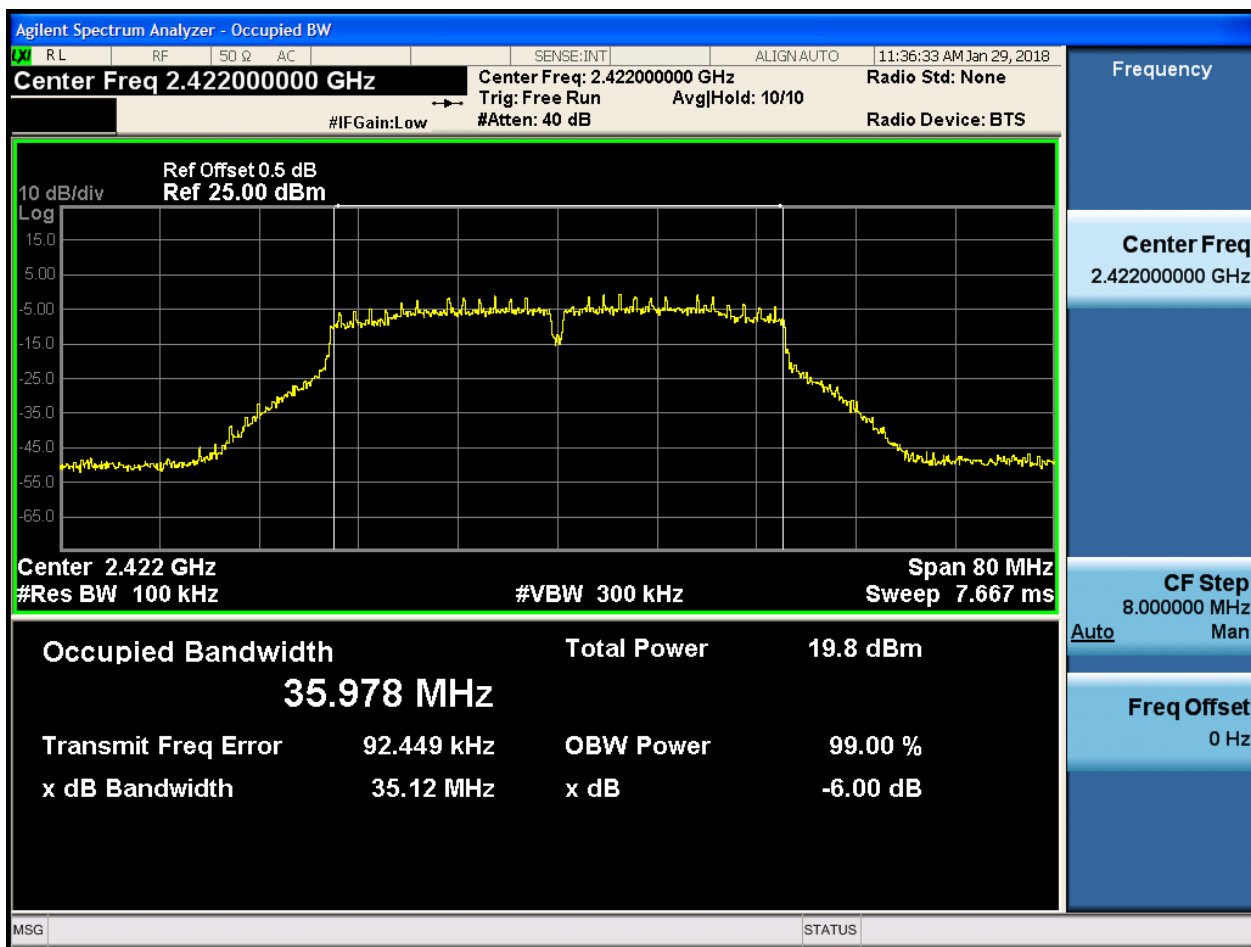


2.38 11N40_H@Ant 2



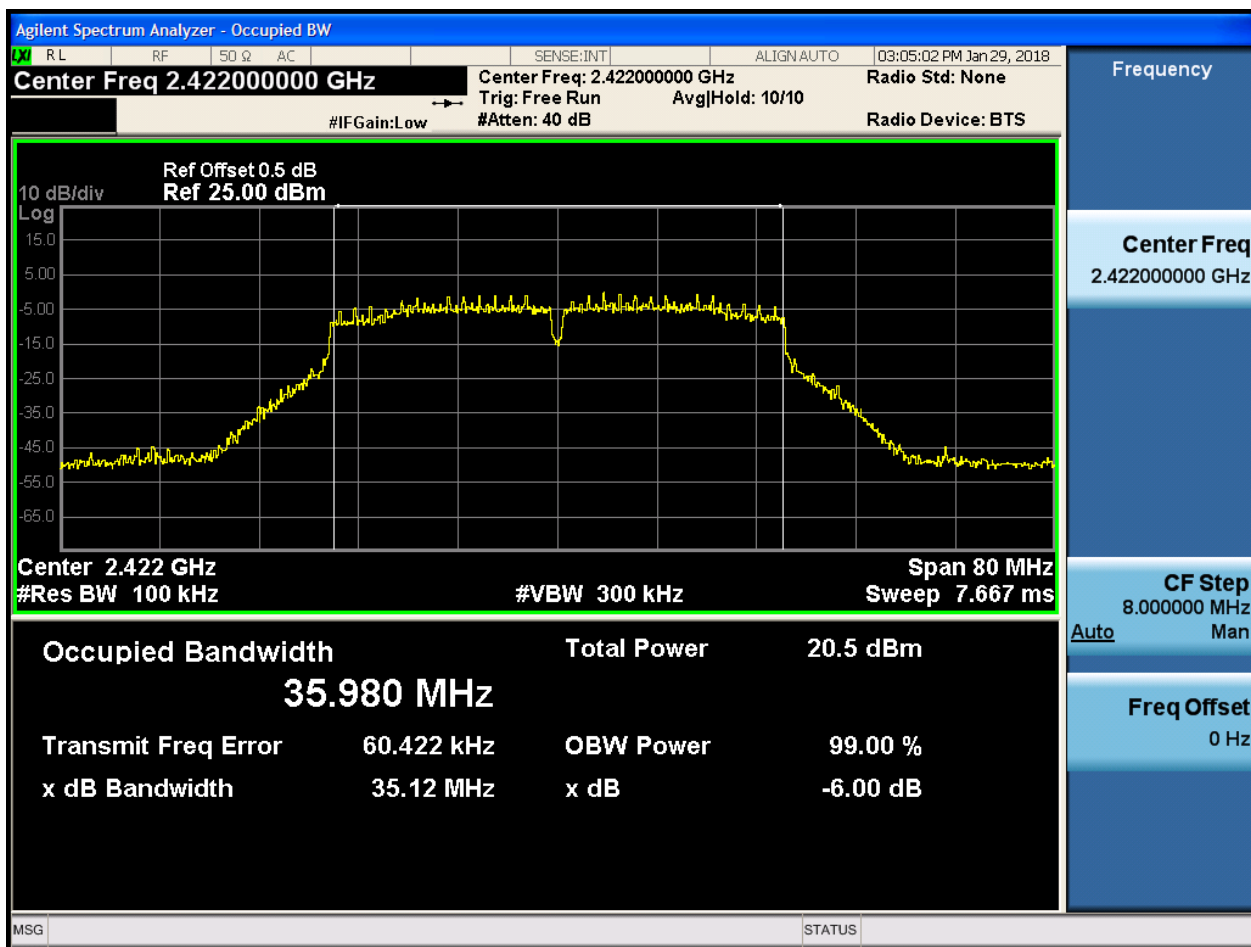


2.39 11N40m_L@Ant 1



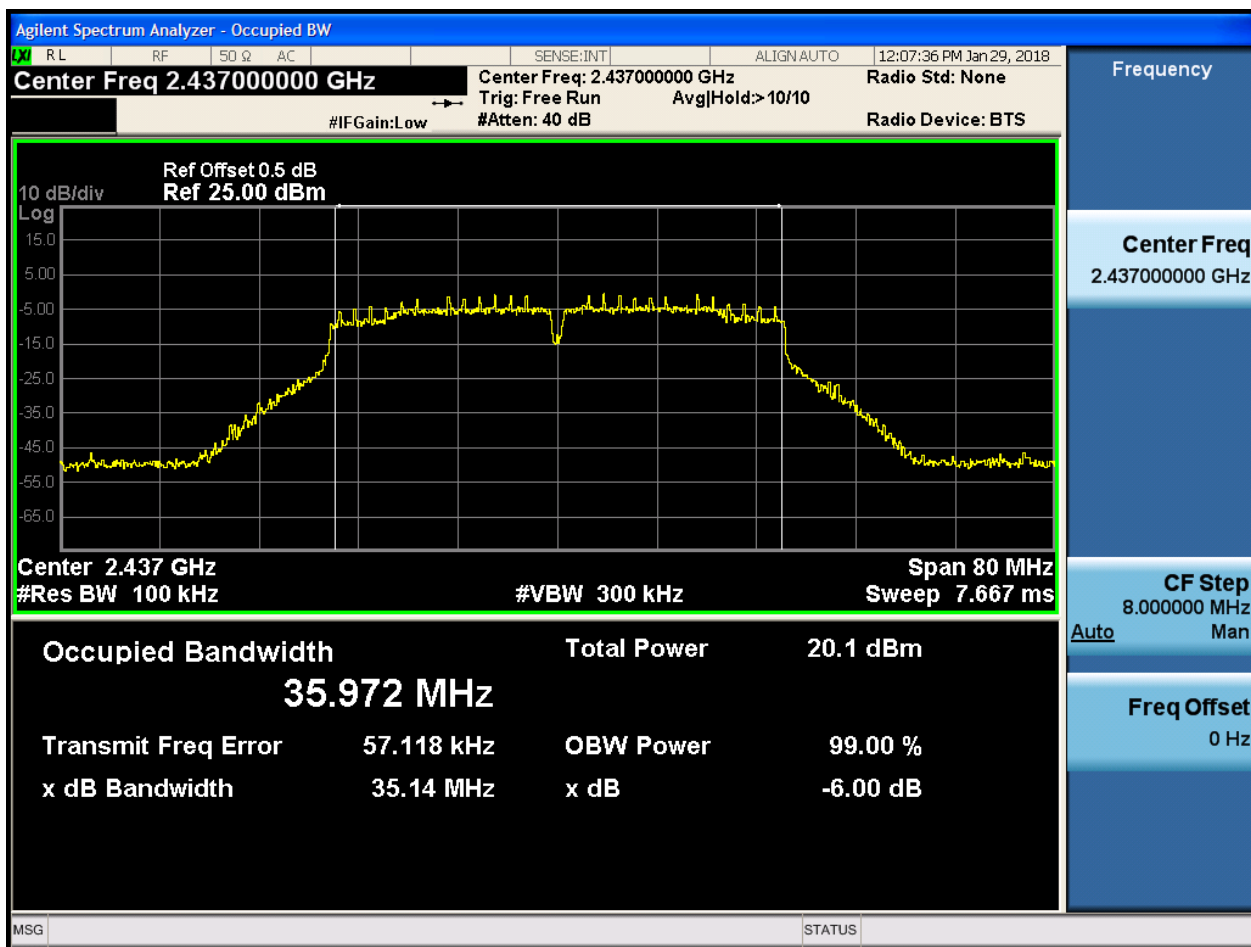


2.40 11N40m_L@Ant 2



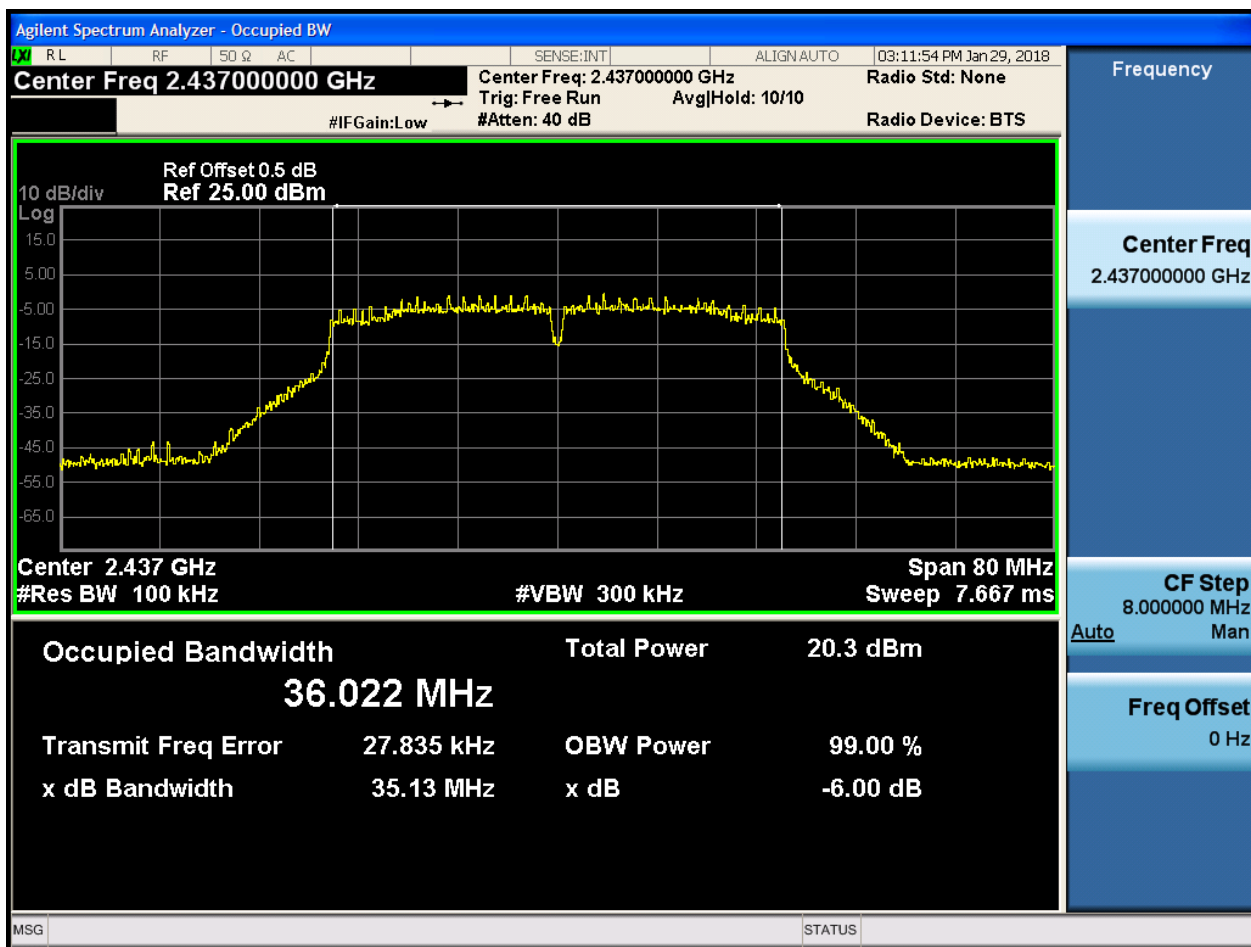


2.41 11N40m_M@Ant 1



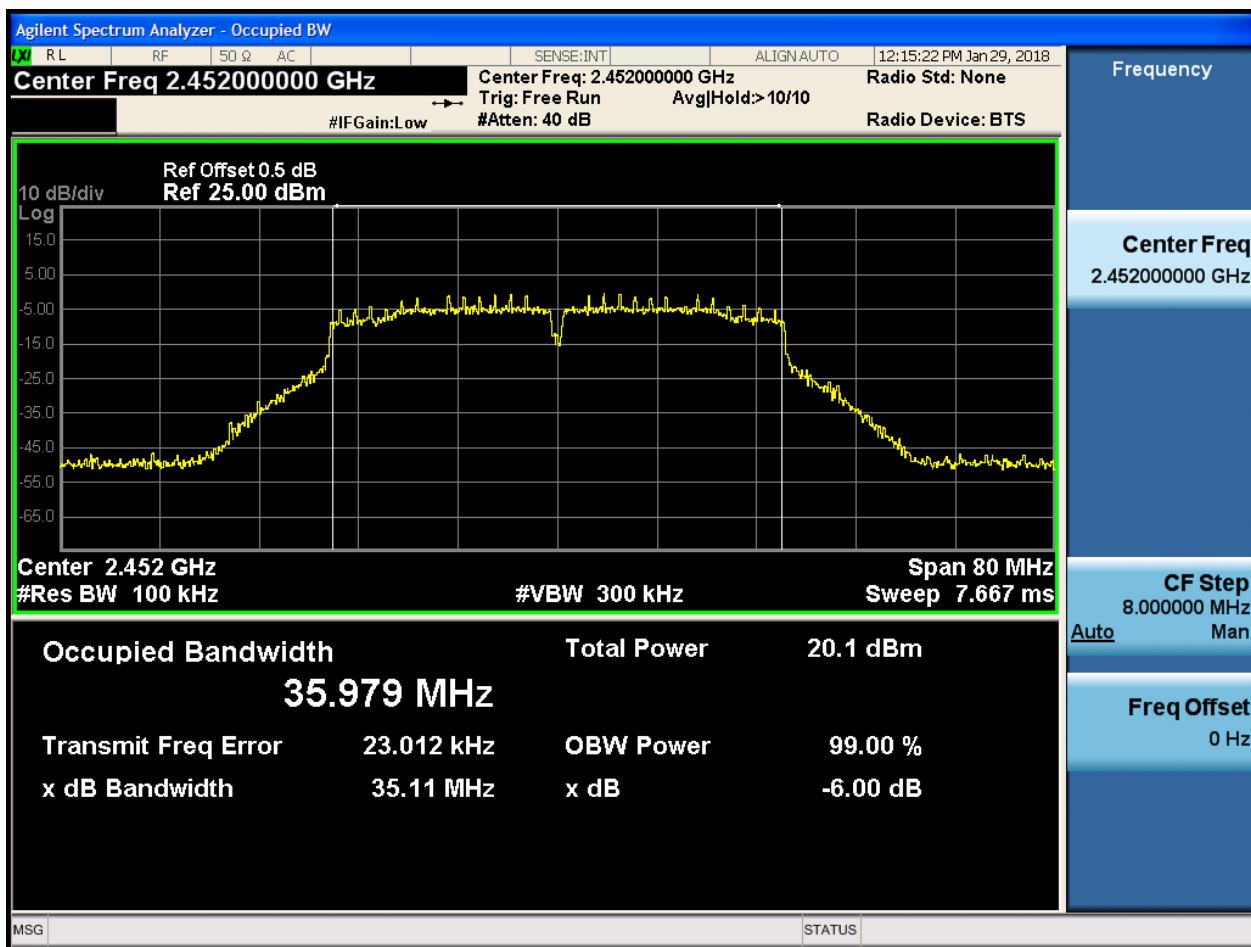


2.42 11N40m_M@Ant 2



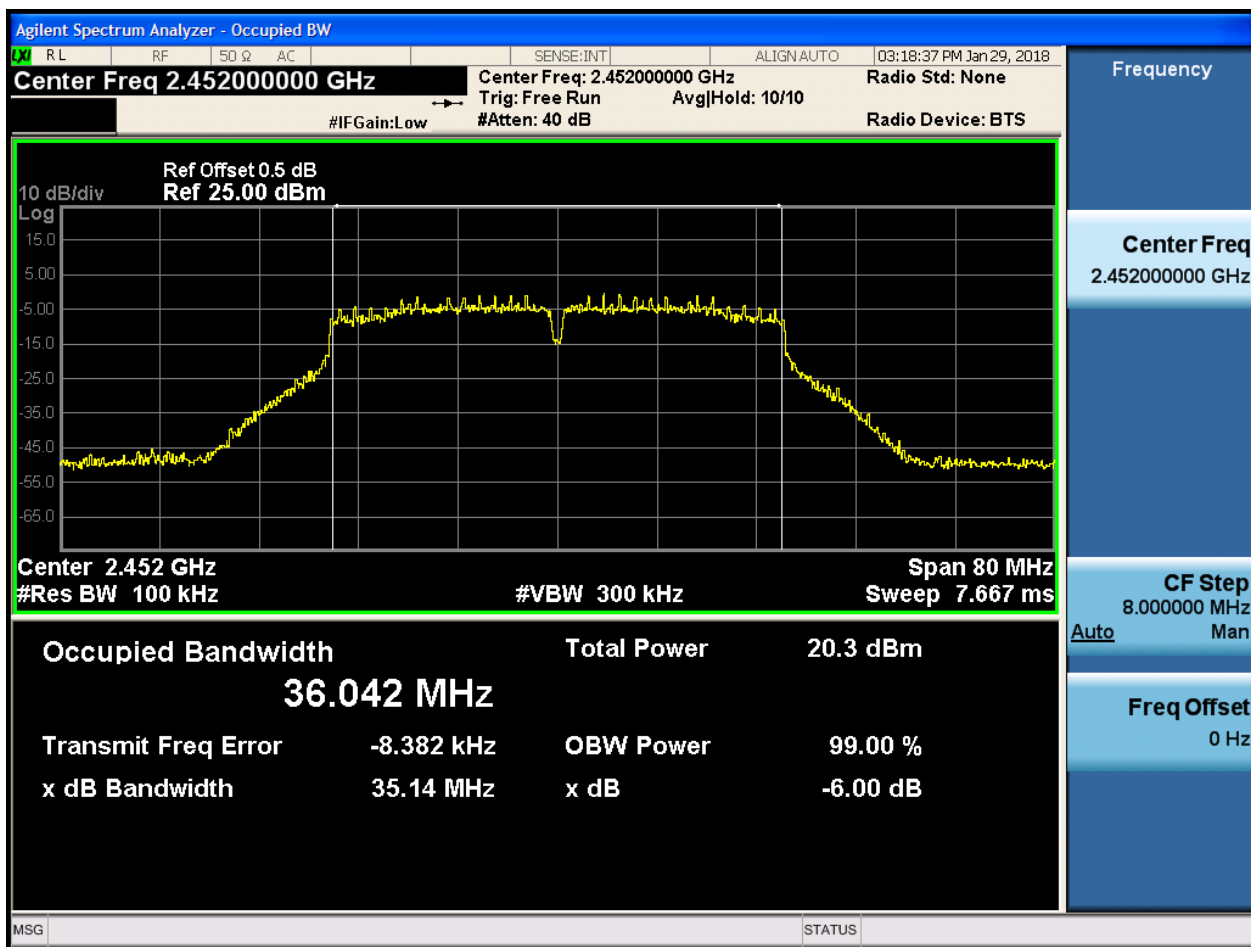


2.43 11N40m_H@Ant 1





2.44 11N40m_H@Ant 2



Appendix B: Occupied Bandwidth

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

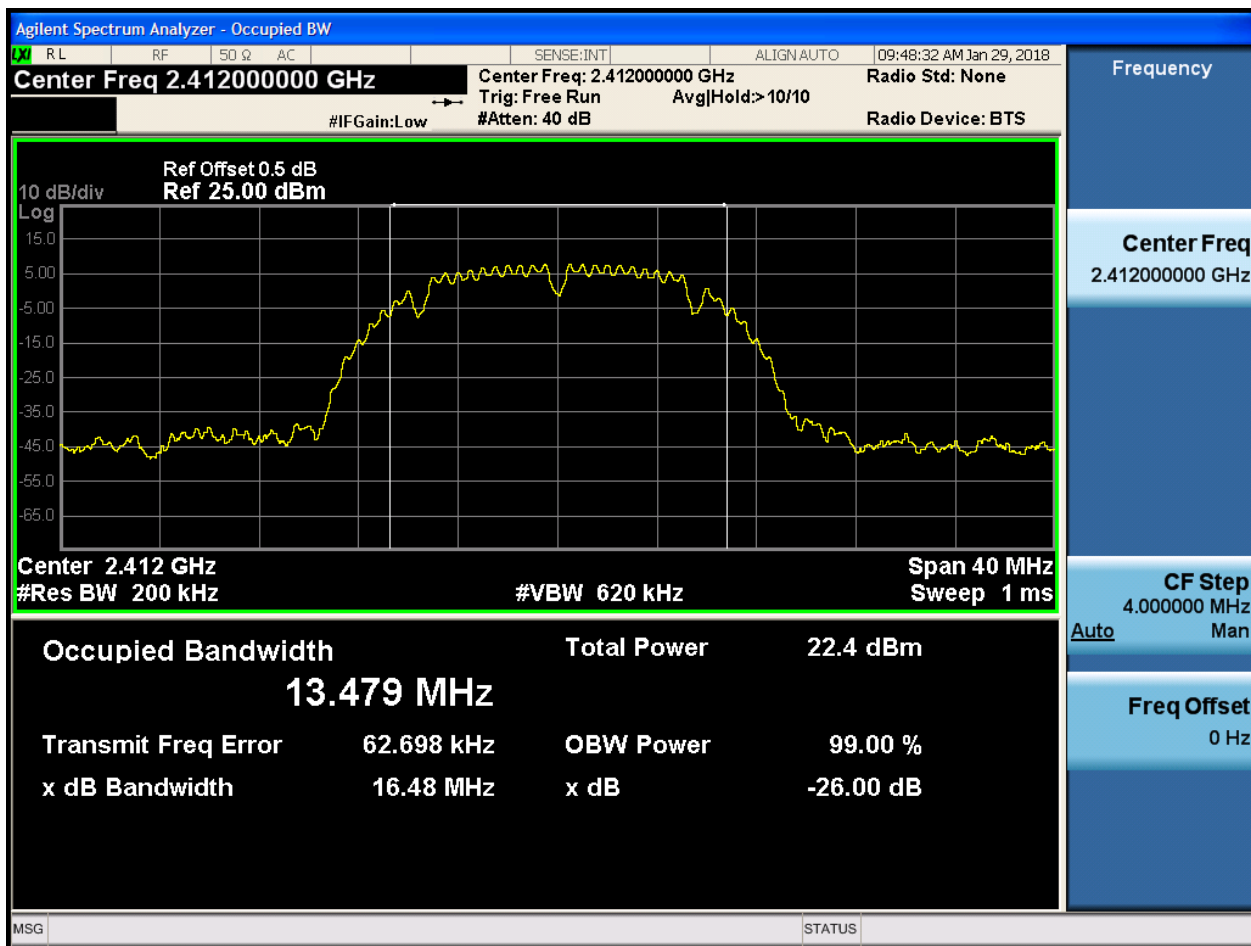
Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	13.48	pass
11B	L	2412	Ant 2	13.41	pass
11B	M	2437	Ant 1	13.51	pass
11B	M	2437	Ant 2	13.44	pass
11B	H	2452	Ant 1	13.51	pass
11B	H	2452	Ant 2	13.42	pass
11B	H	2462	Ant 1	13.54	pass
11B	H	2462	Ant 2	13.59	pass
11G	L	2412	Ant 1	16.49	pass
11G	L	2412	Ant 2	16.54	pass
11G	M	2437	Ant 1	16.52	pass
11G	M	2437	Ant 2	16.52	pass
11G	H	2452	Ant 1	16.5	pass
11G	H	2452	Ant 2	16.51	pass
11G	H	2462	Ant 1	16.52	pass
11G	H	2462	Ant 2	16.48	pass
11N20	L	2412	Ant 1	17.67	pass
11N20	L	2412	Ant 2	17.66	pass
11N20	M	2437	Ant 1	17.66	pass
11N20	M	2437	Ant 2	17.64	pass
11N20	H	2452	Ant 1	17.66	pass
11N20	H	2452	Ant 2	17.66	pass
11N20	H	2462	Ant 1	17.65	pass
11N20	H	2462	Ant 2	17.64	pass
11N20m	L	2412	Ant 1	17.66	pass
11N20m	L	2412	Ant 2	17.66	pass
11N20m	M	2437	Ant 1	17.65	pass
11N20m	M	2437	Ant 2	17.66	pass
11N20m	H	2452	Ant 1	17.65	pass
11N20m	H	2452	Ant 2	17.67	pass
11N20m	H	2462	Ant 1	17.66	pass
11N20m	H	2462	Ant 2	17.66	pass
11N40	L	2422	Ant 1	36.08	pass

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11N40	L	2422	Ant 2	36.20	pass
11N40	M	2437	Ant 1	36.12	pass
11N40	M	2437	Ant 2	36.11	pass
11N40	H	2452	Ant 1	36.13	pass
11N40	H	2452	Ant 2	36.07	pass
11N40m	L	2422	Ant 1	36.15	pass
11N40m	L	2422	Ant 2	36.07	pass
11N40m	M	2437	Ant 1	36.14	pass
11N40m	M	2437	Ant 2	36.05	pass
11N40m	H	2452	Ant 1	36.09	pass
11N40m	H	2452	Ant 2	36.05	pass



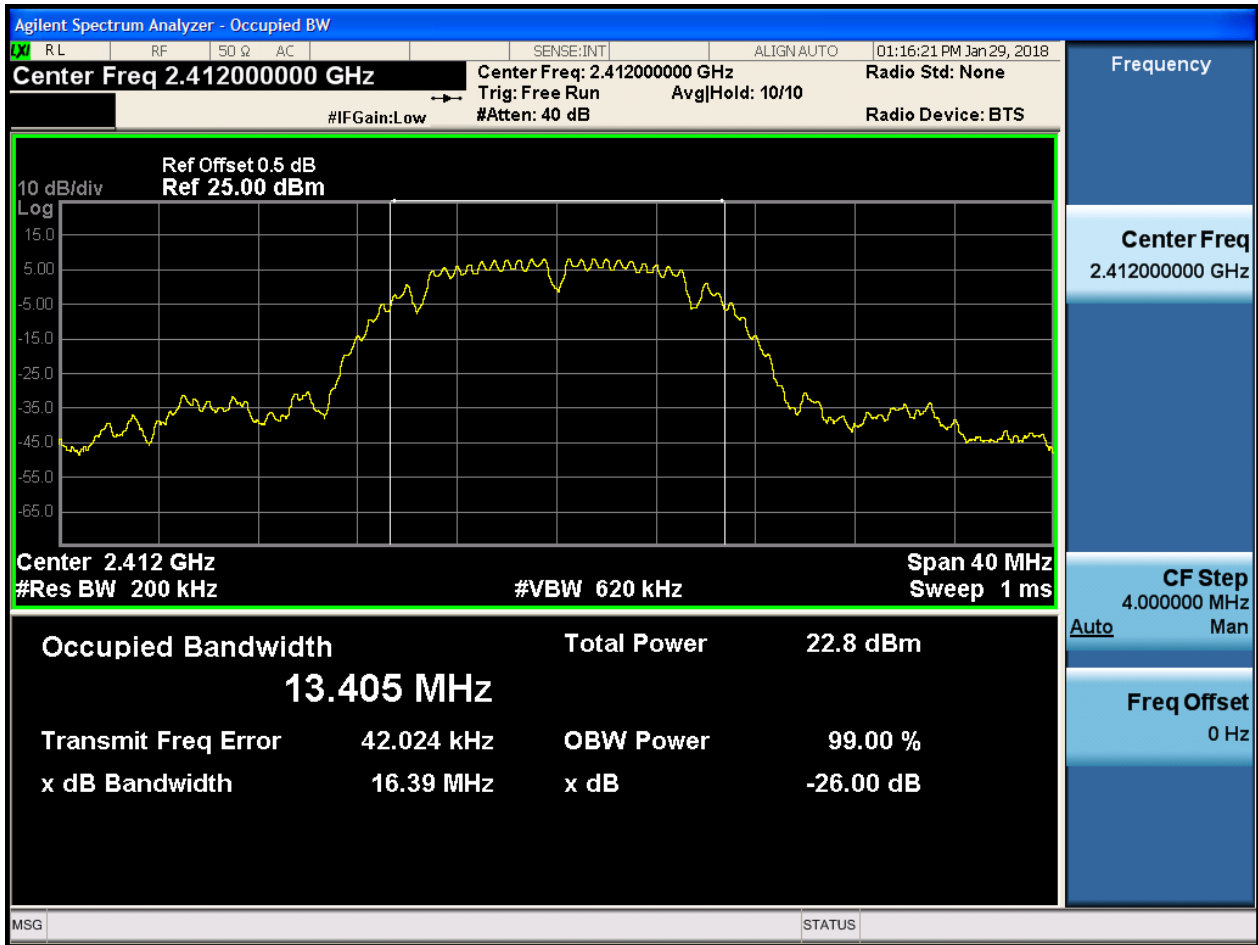
Part II - Test Plots

2.1 11B_L@Ant 1



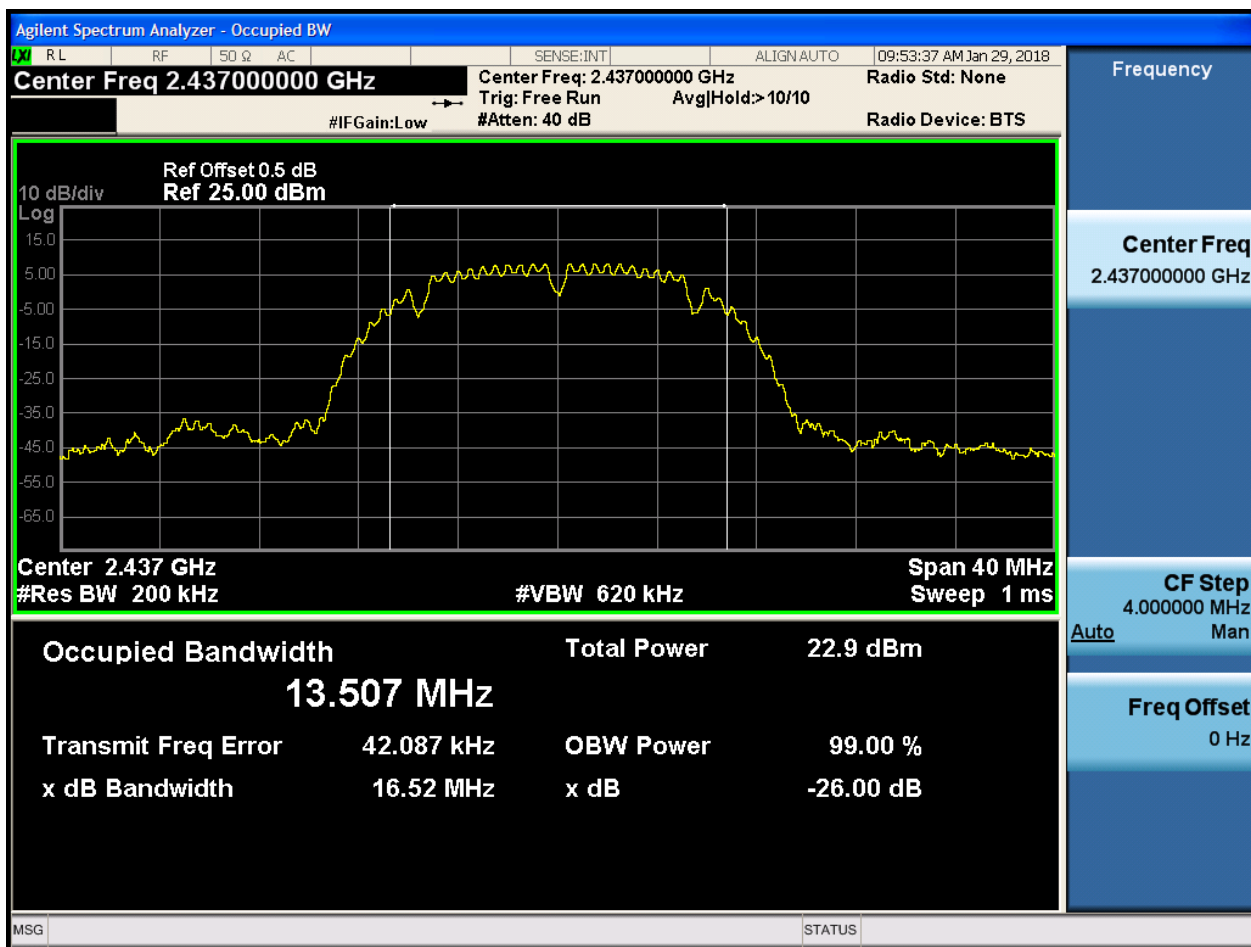


2.2 11B_L@Ant 2



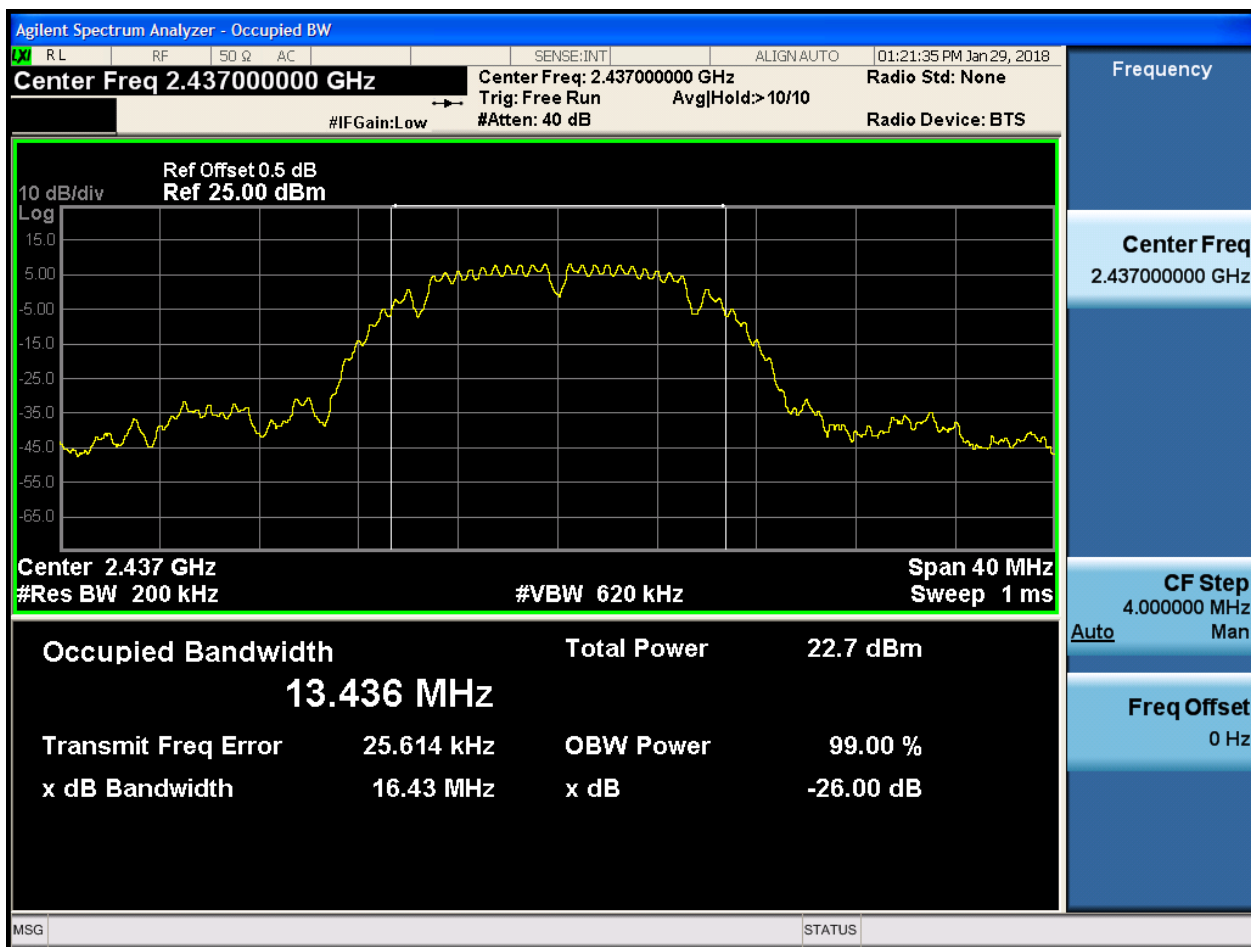


2.3 11B_M@Ant 1



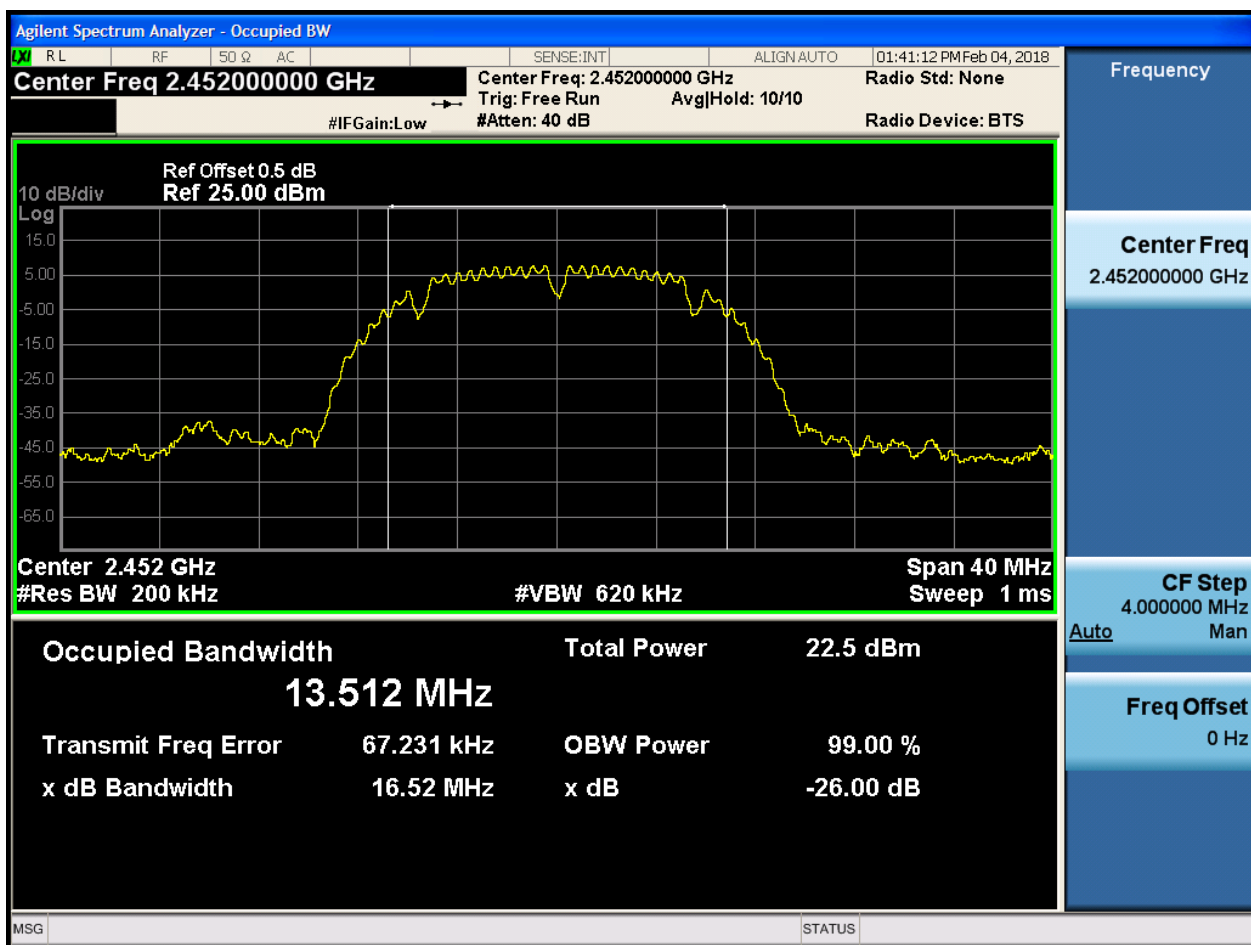


2.4 11B_M@Ant 2



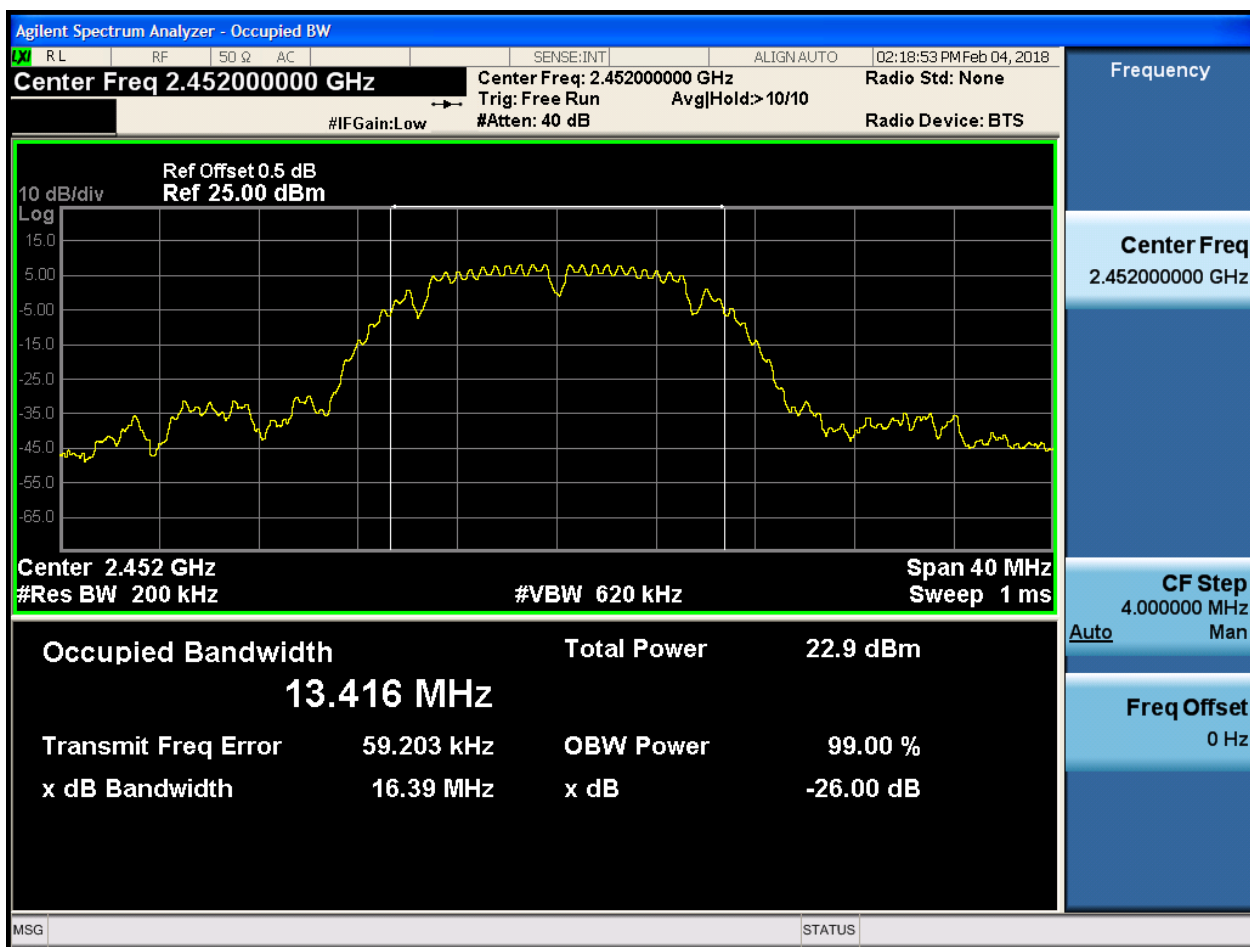


2.5 11B_H_2452@Ant 1



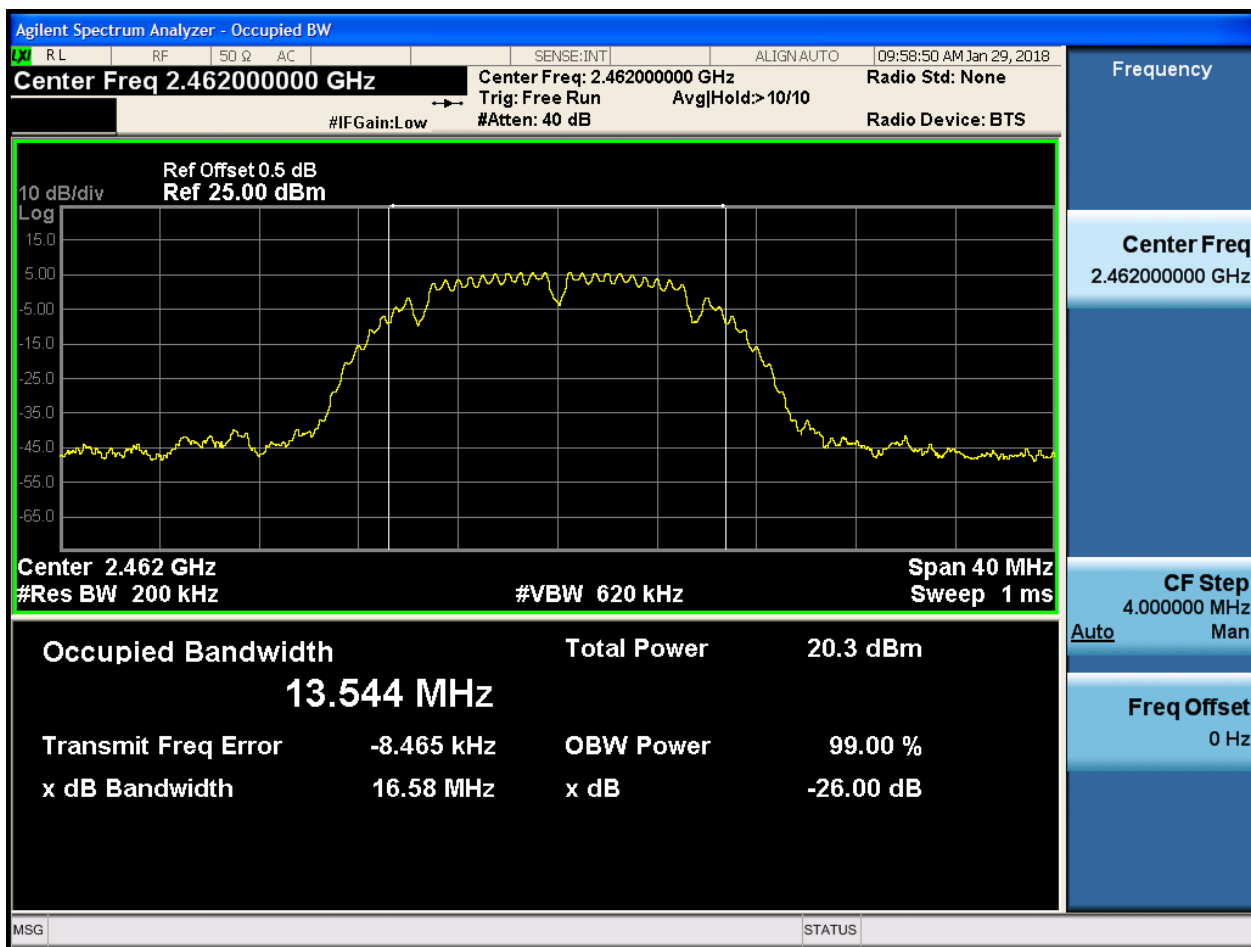


2.6 11B_H_2452@Ant 2



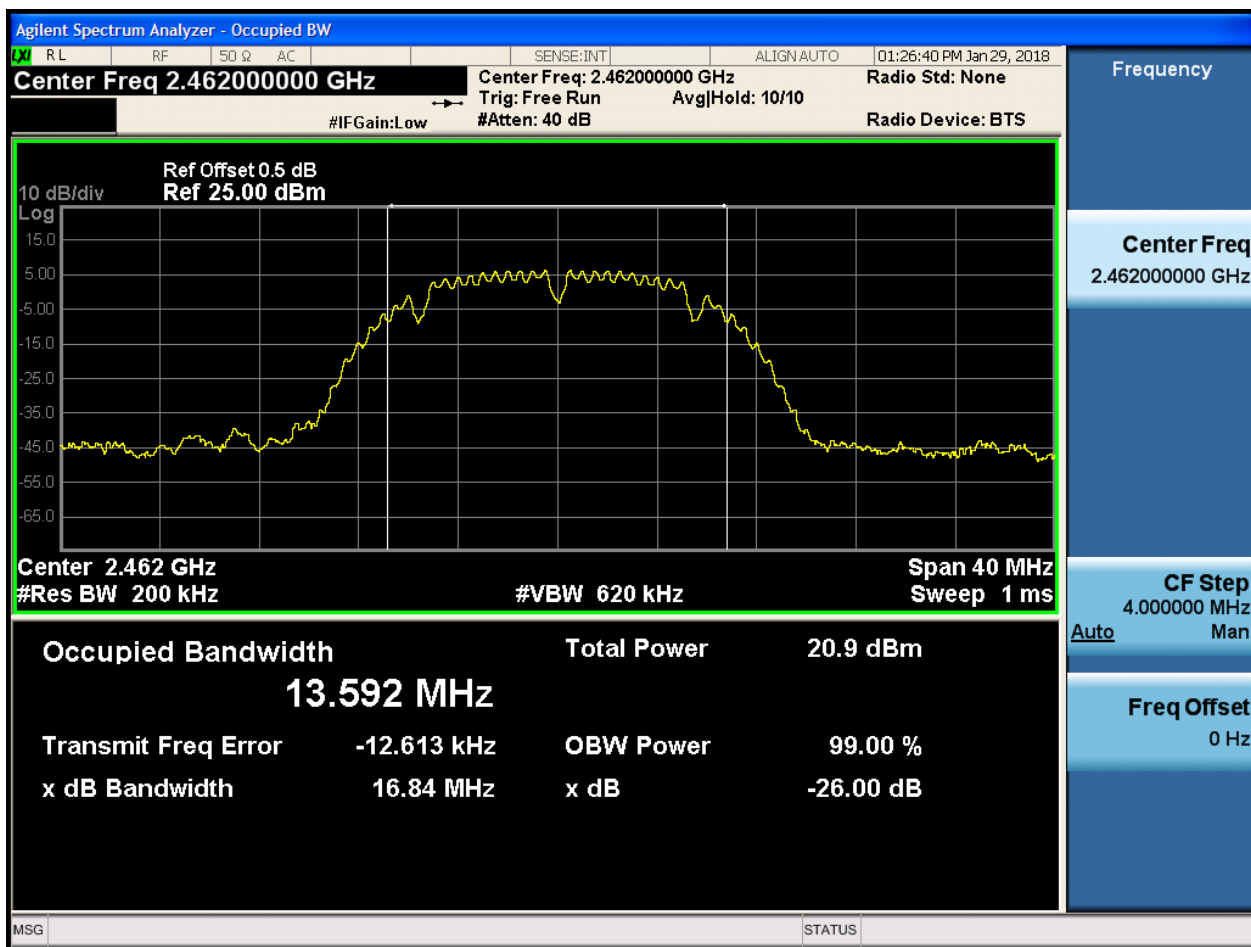


2.7 11B_H_2462@Ant 1



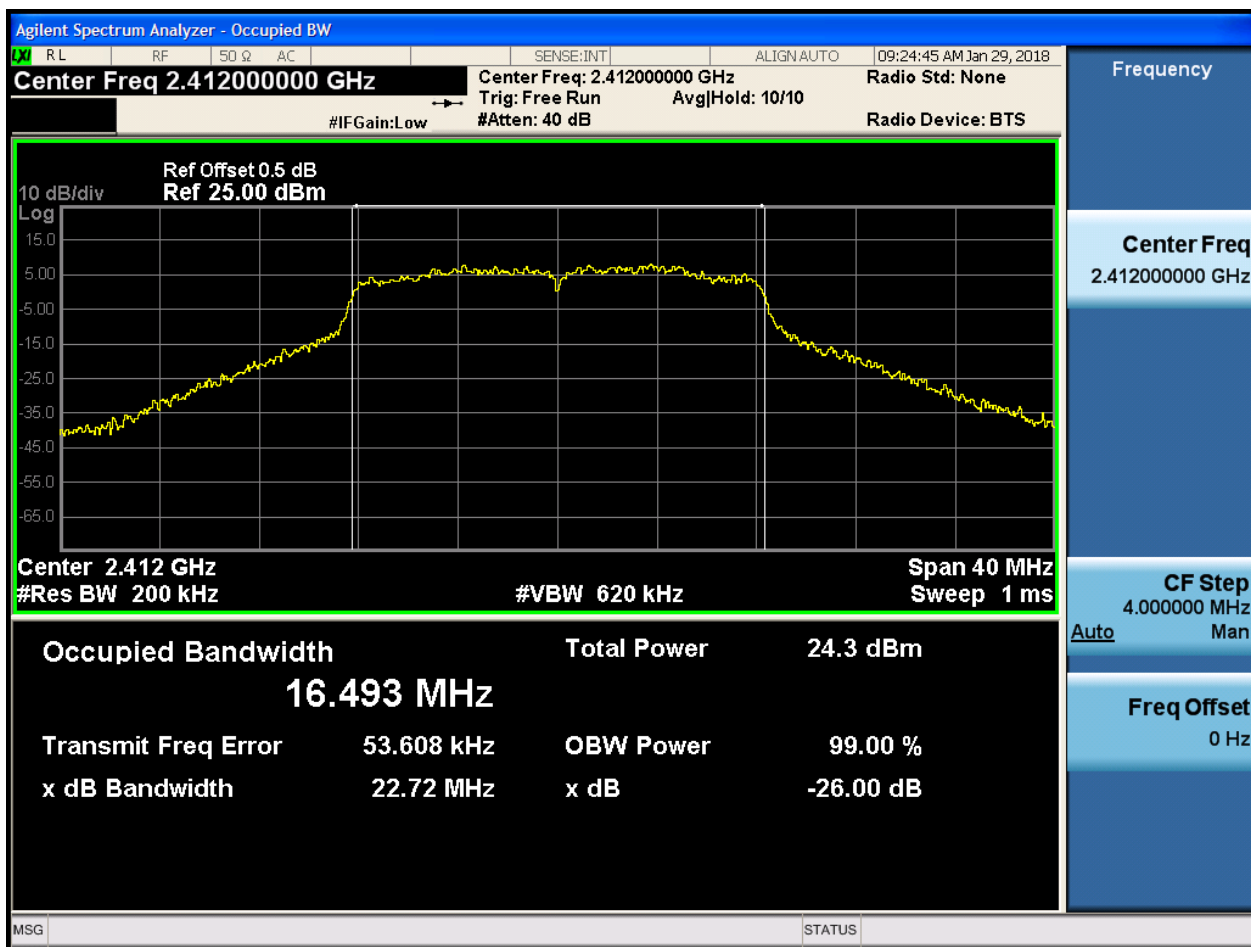


2.8 11B_H_2462@Ant 2



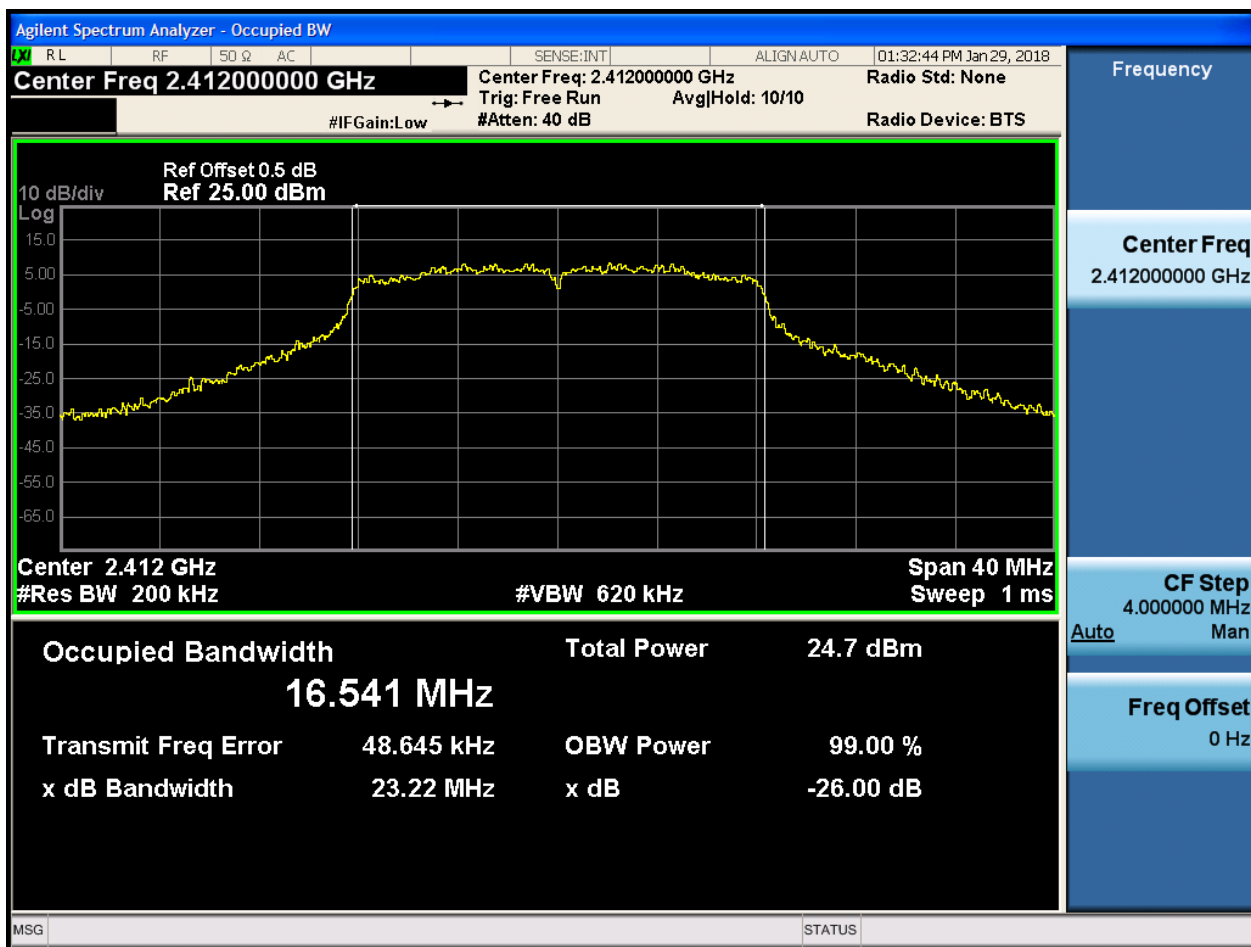


2.9 11G_L@Ant 1



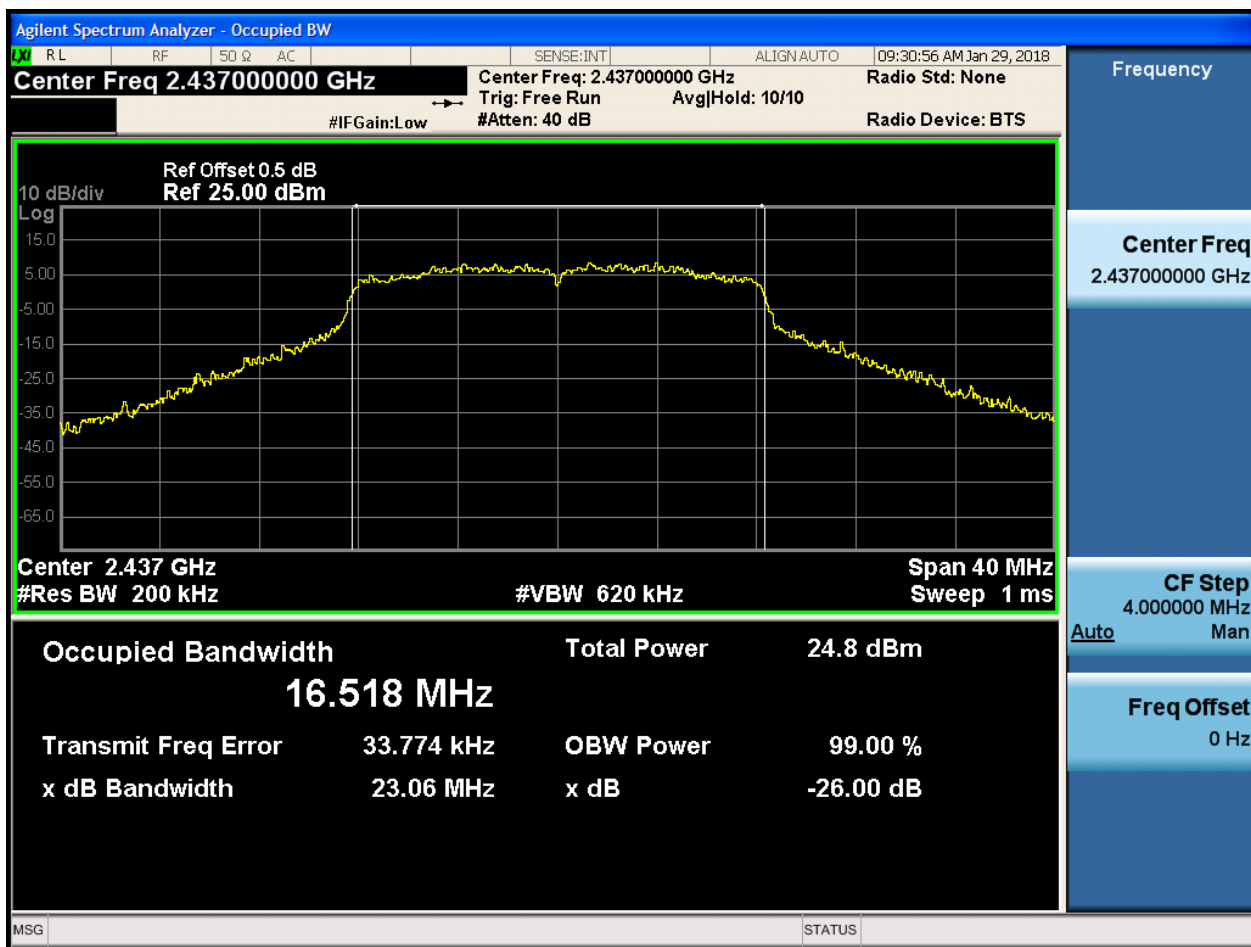


2.10 11G_L@Ant 2



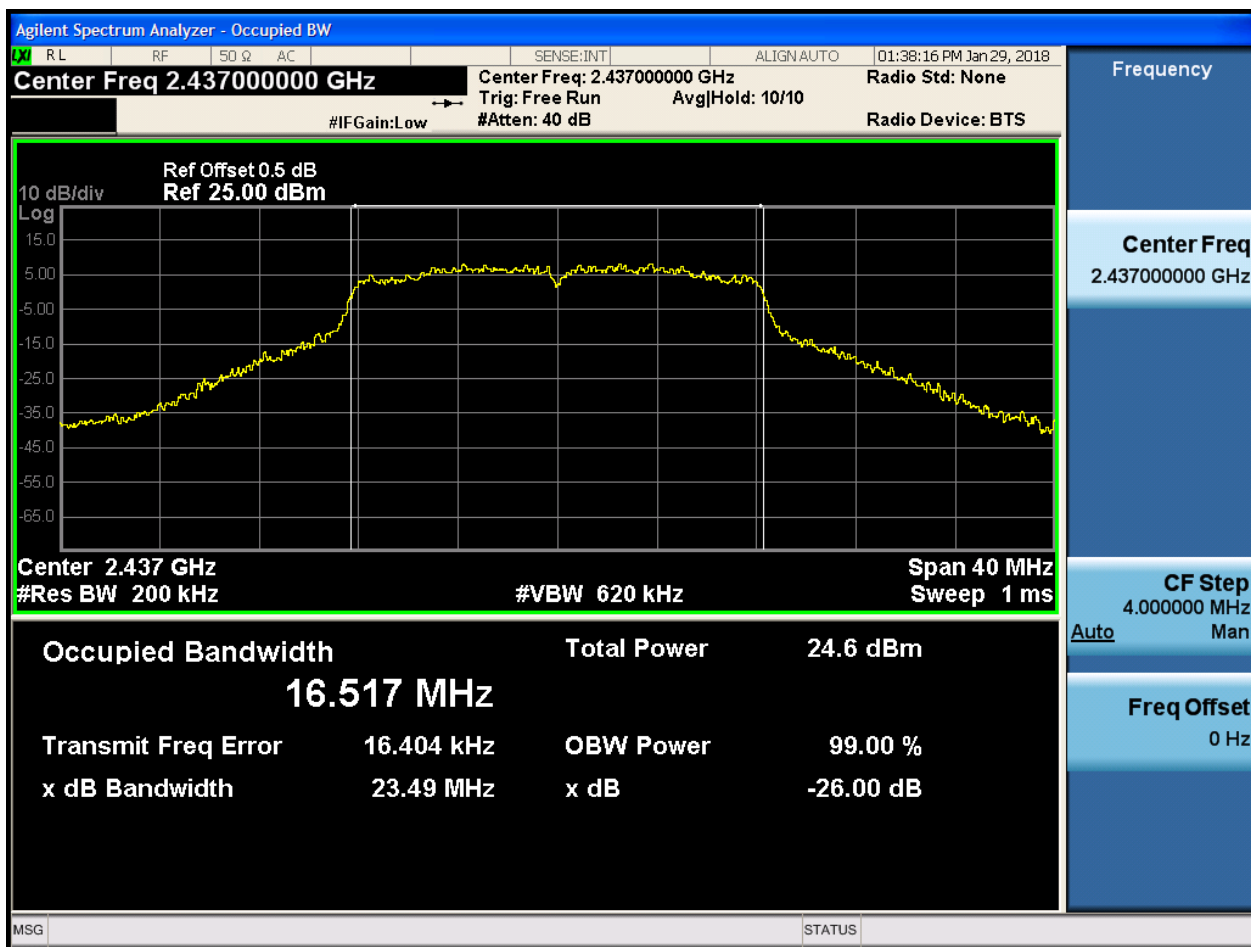


2.11 11G_M@Ant 1



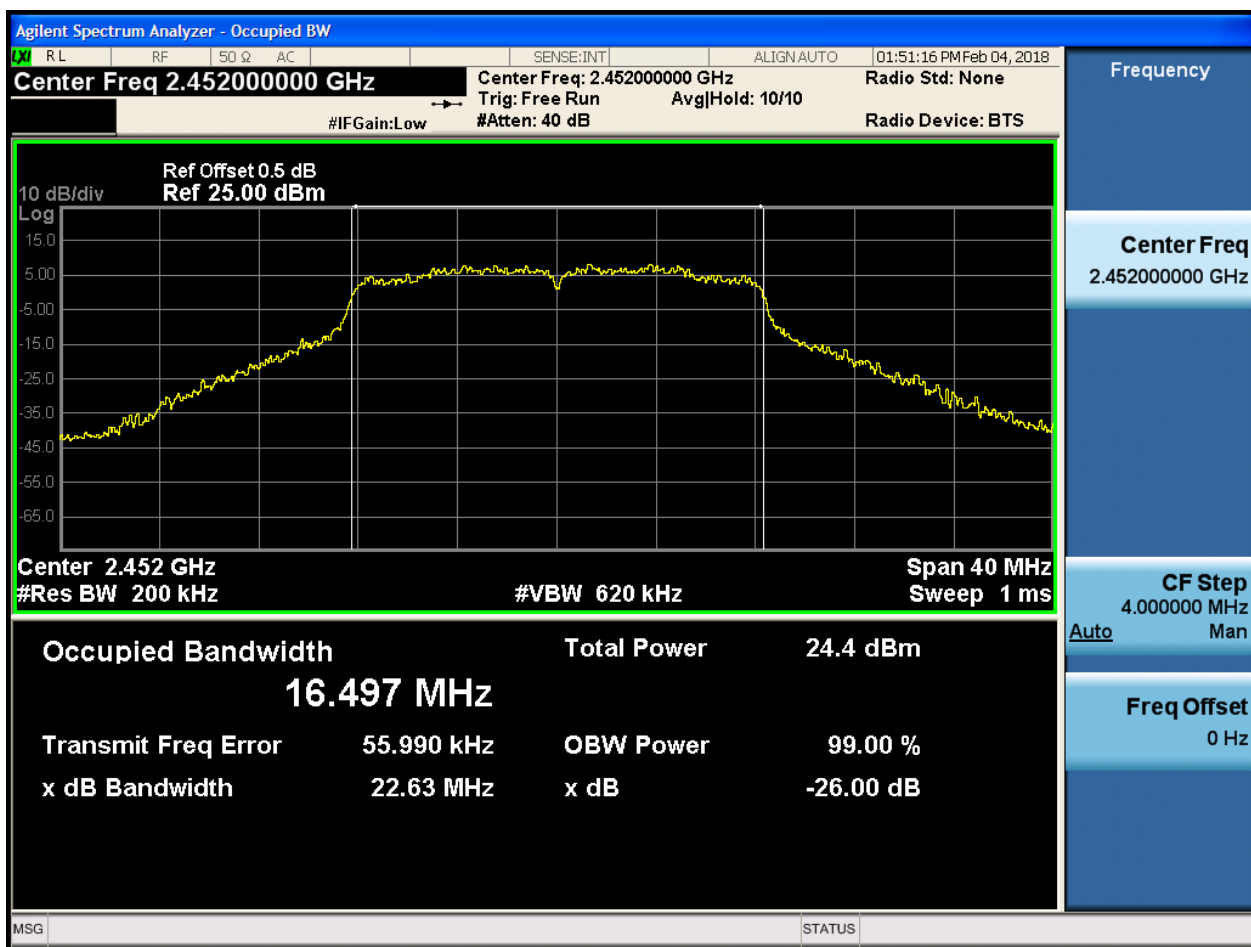


2.12 11G_M@Ant 2



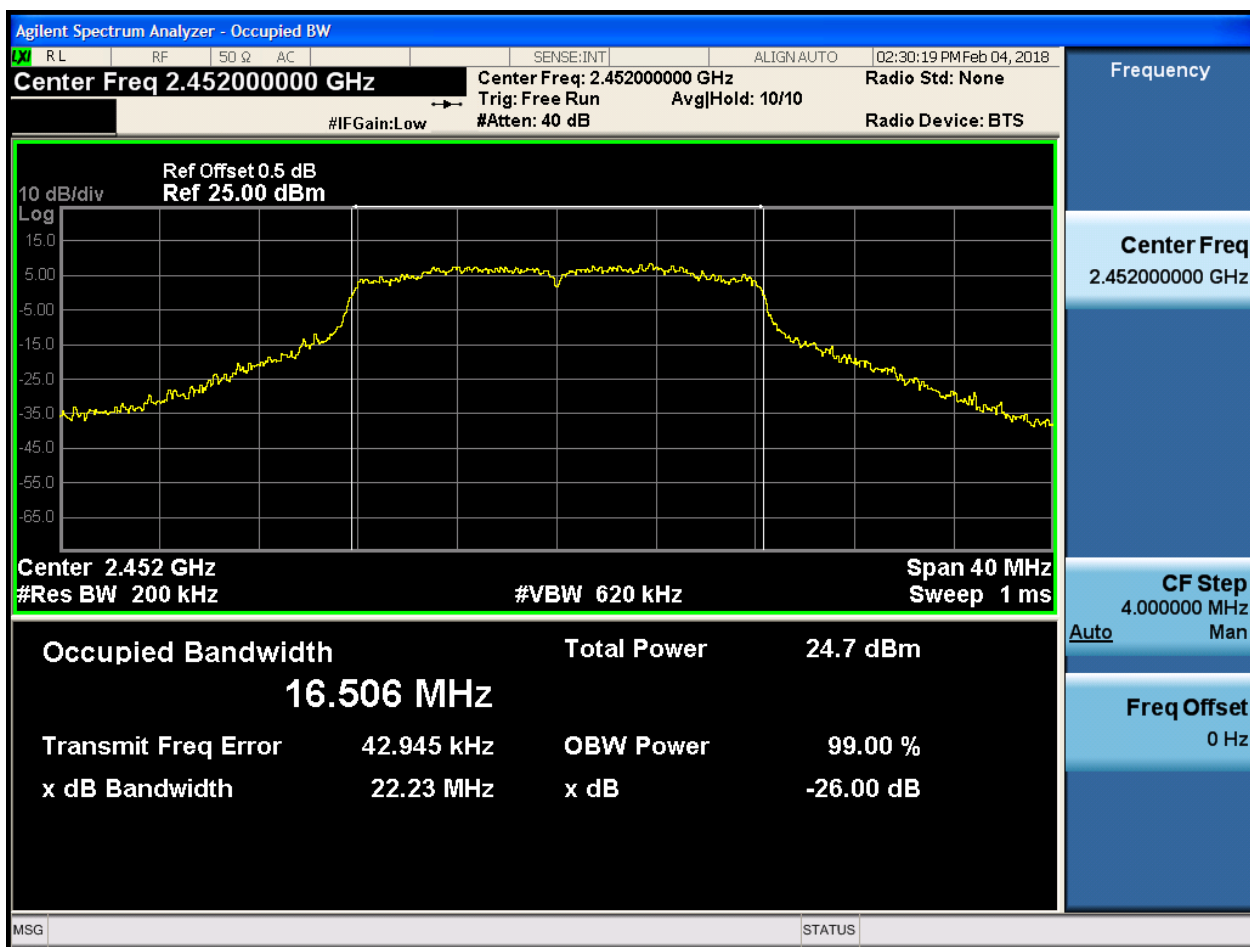


2.13 11G_H_2452@Ant 1

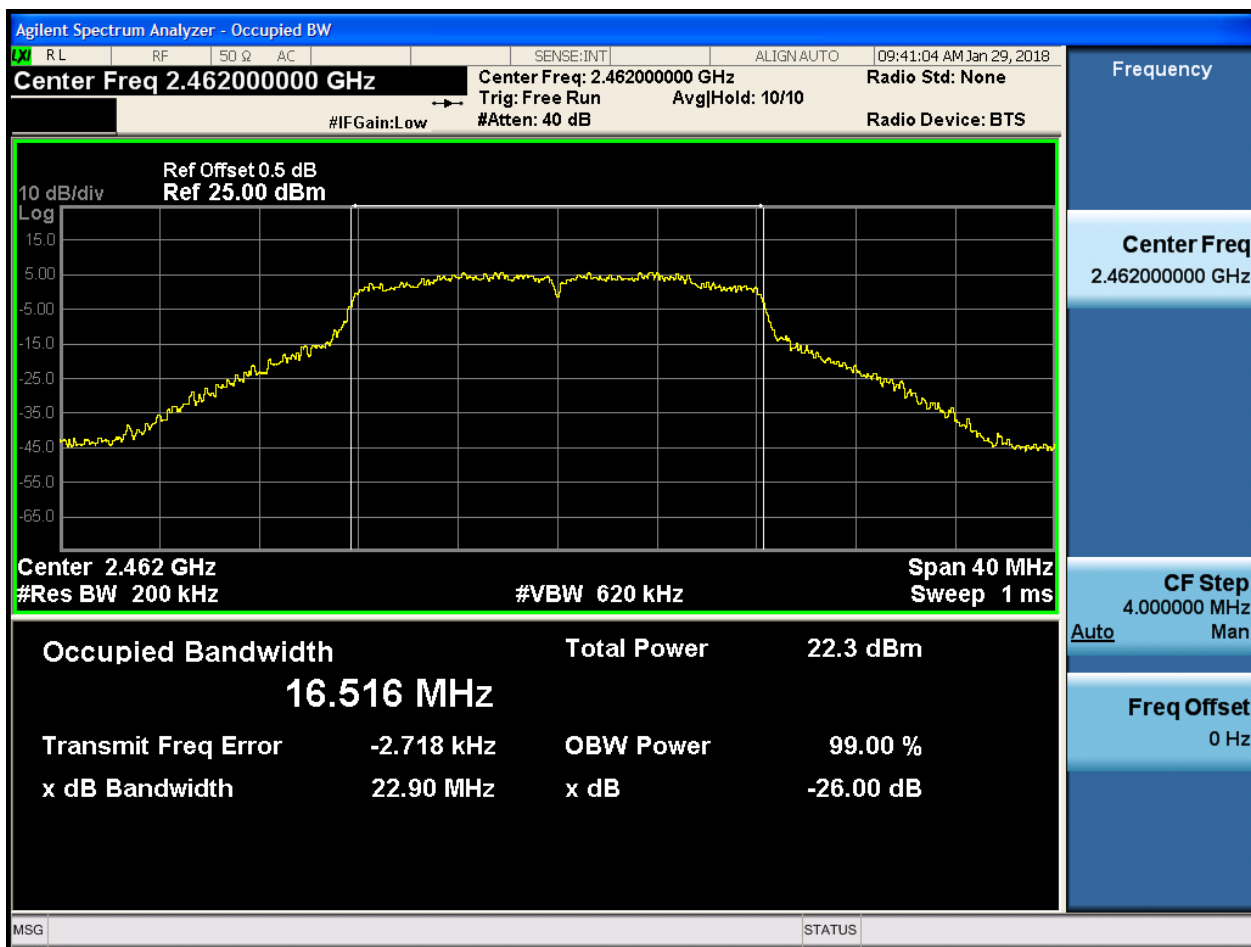




2.14 11G_H_2452@Ant 2

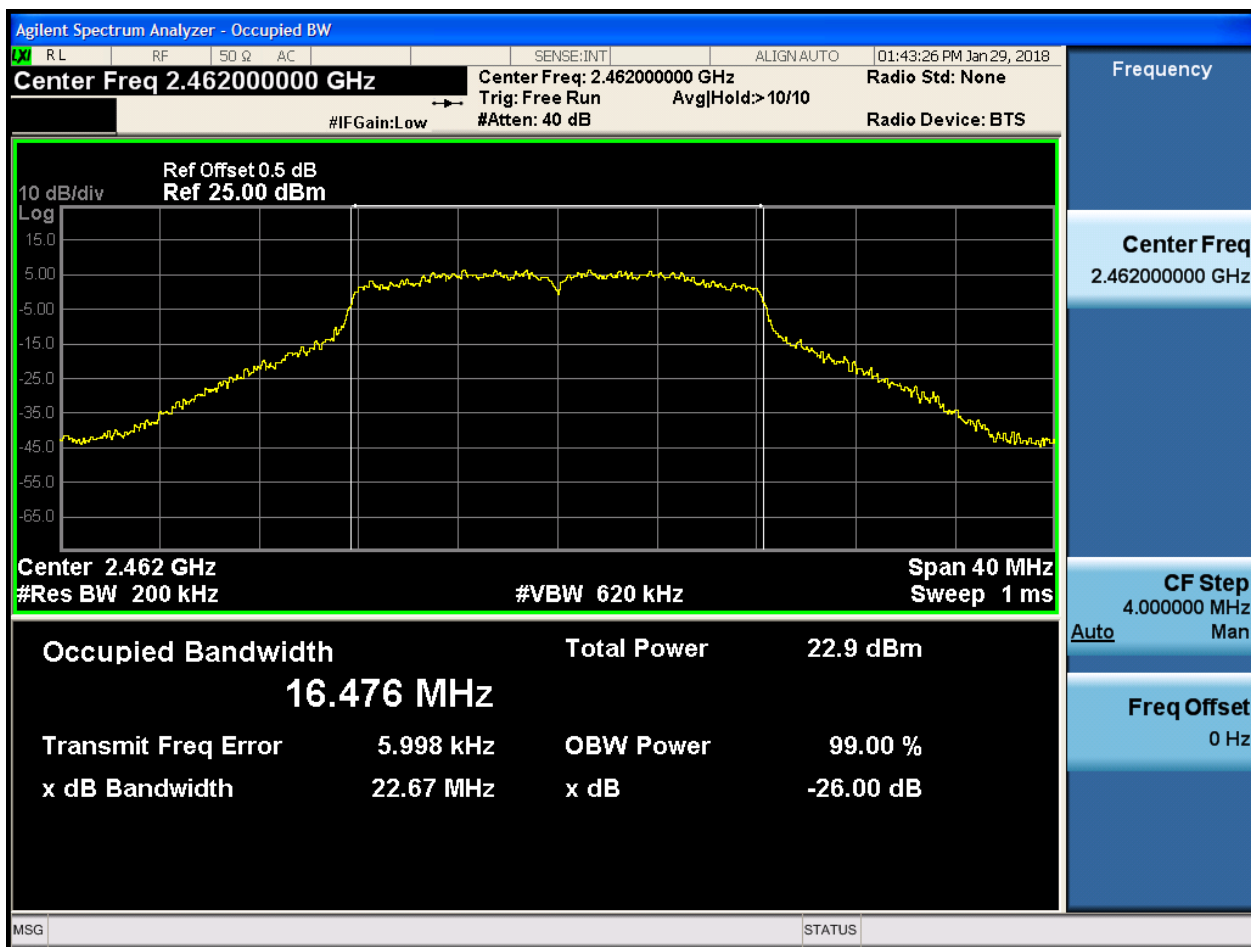


2.15 11G_H_2462@Ant 1



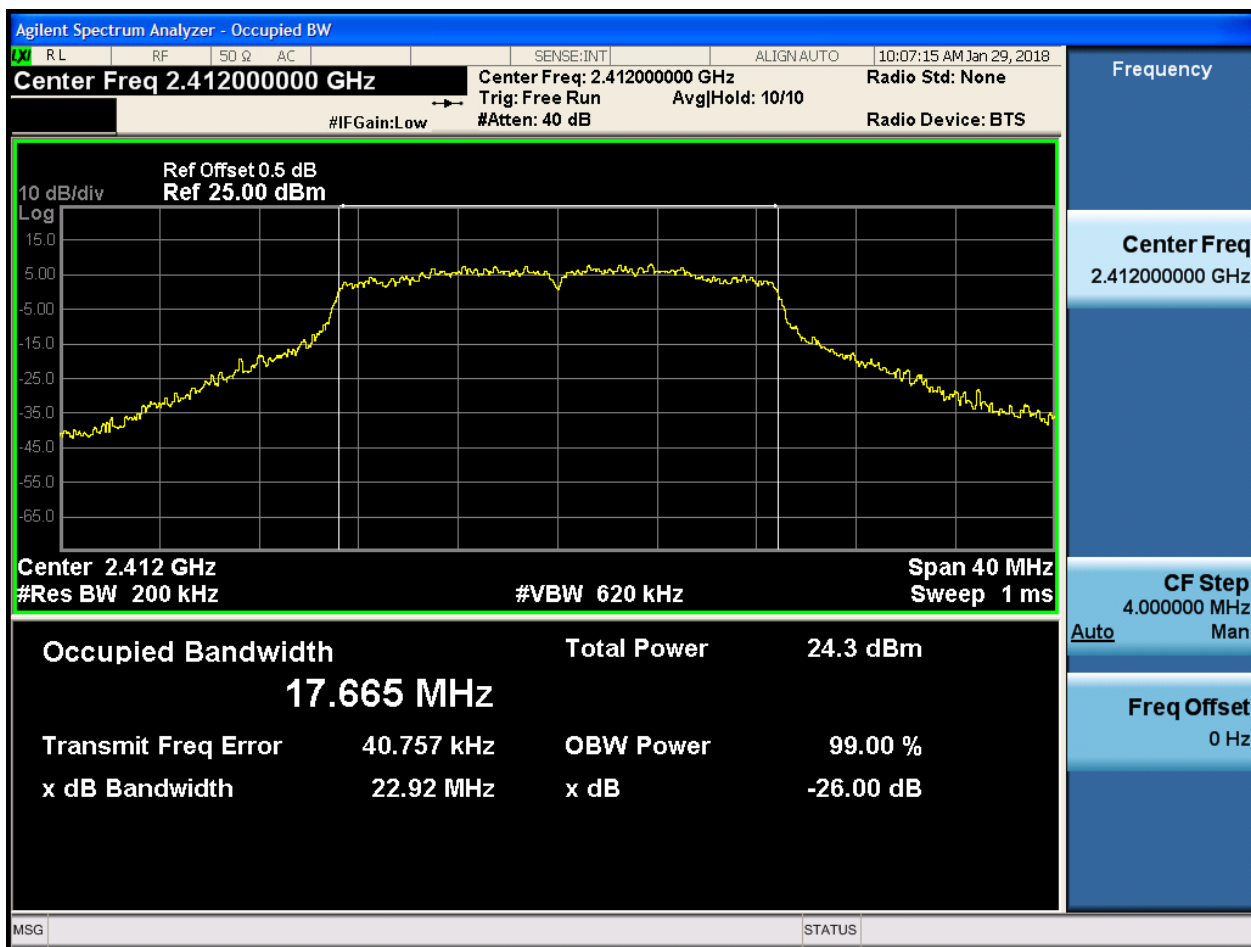


2.16 11G_H_2462@Ant 2



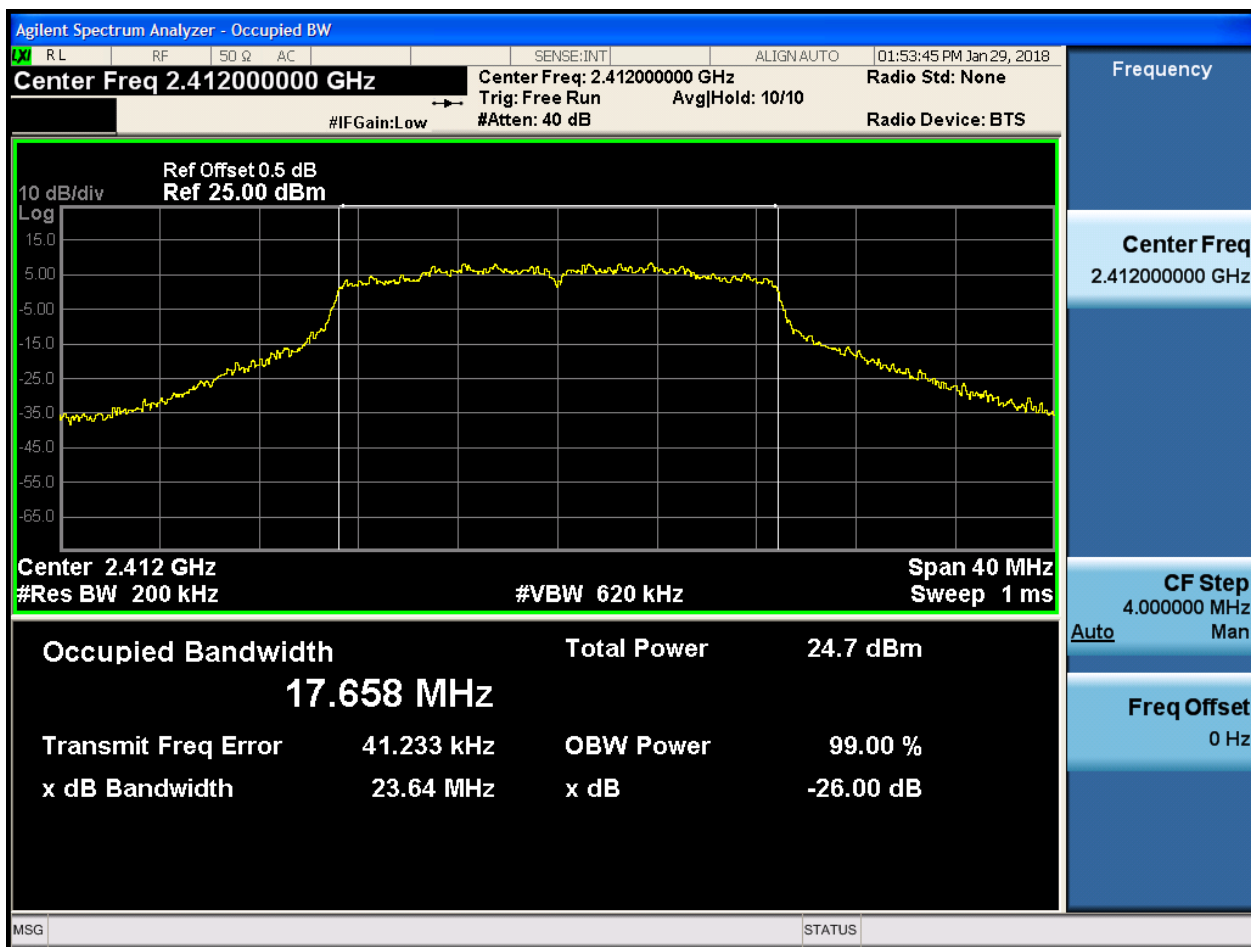


2.17 11N20_L@Ant 1



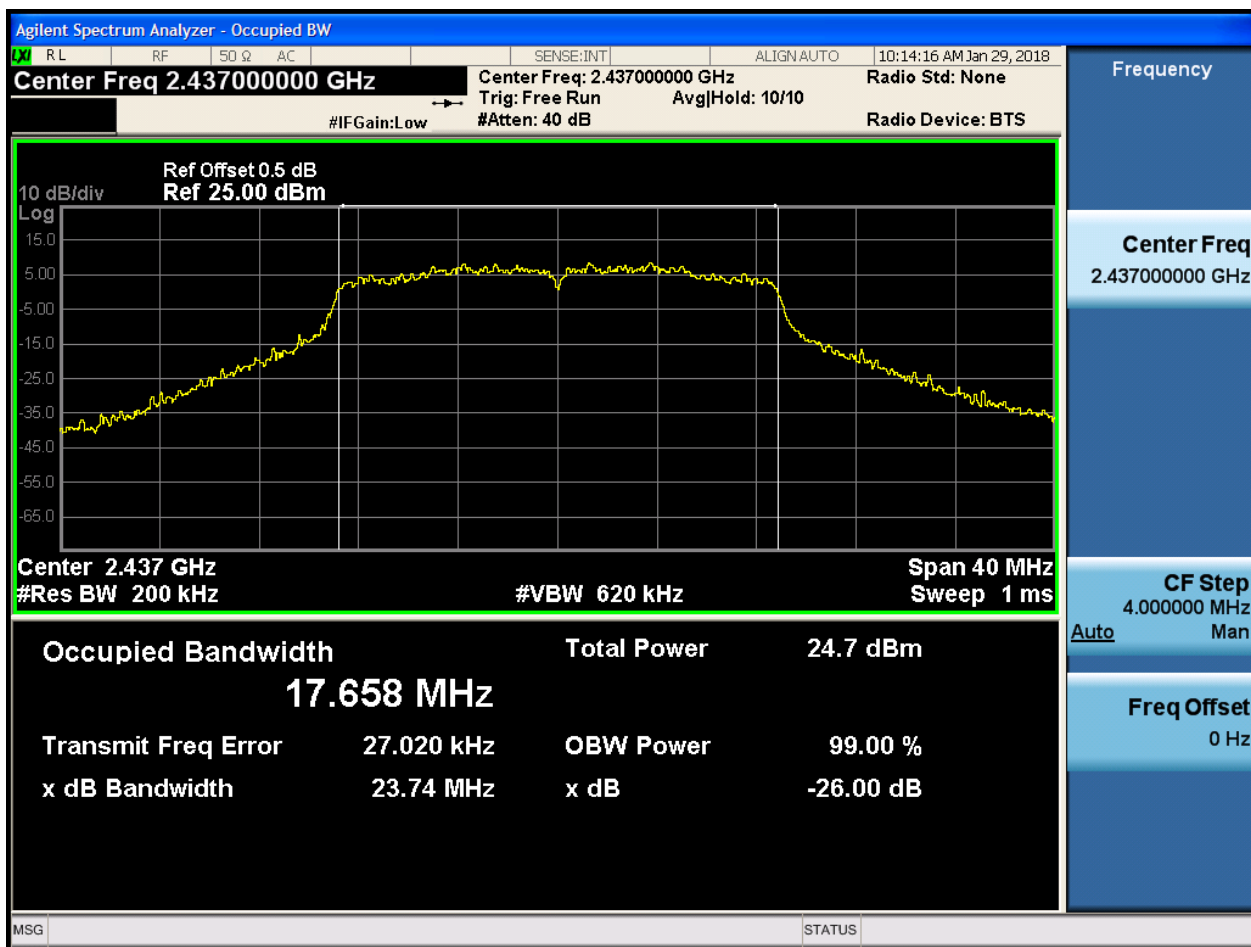


2.18 11N20_L@Ant 2



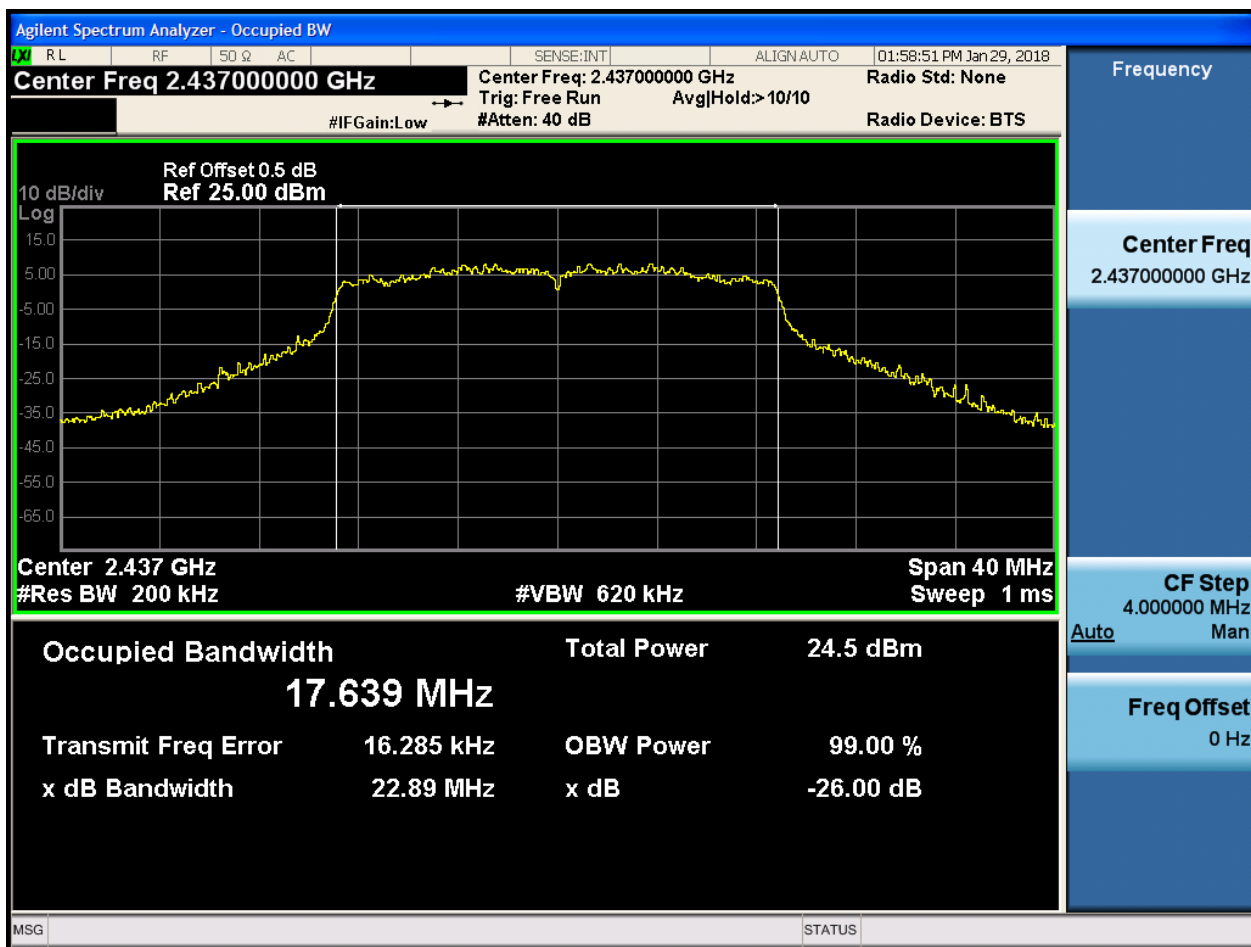


2.19 11N20_M@Ant 1



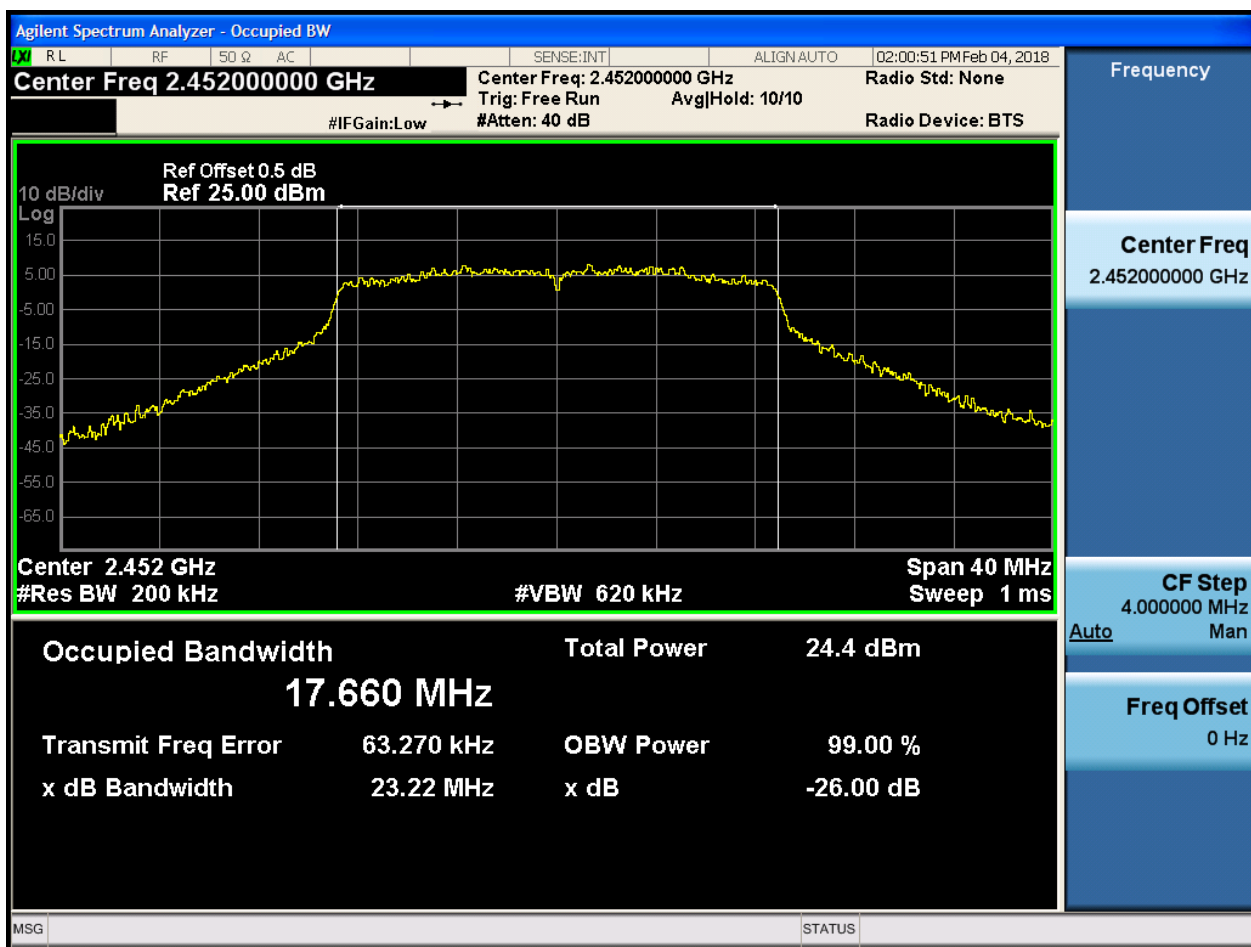


2.20 11N20_M@Ant 2



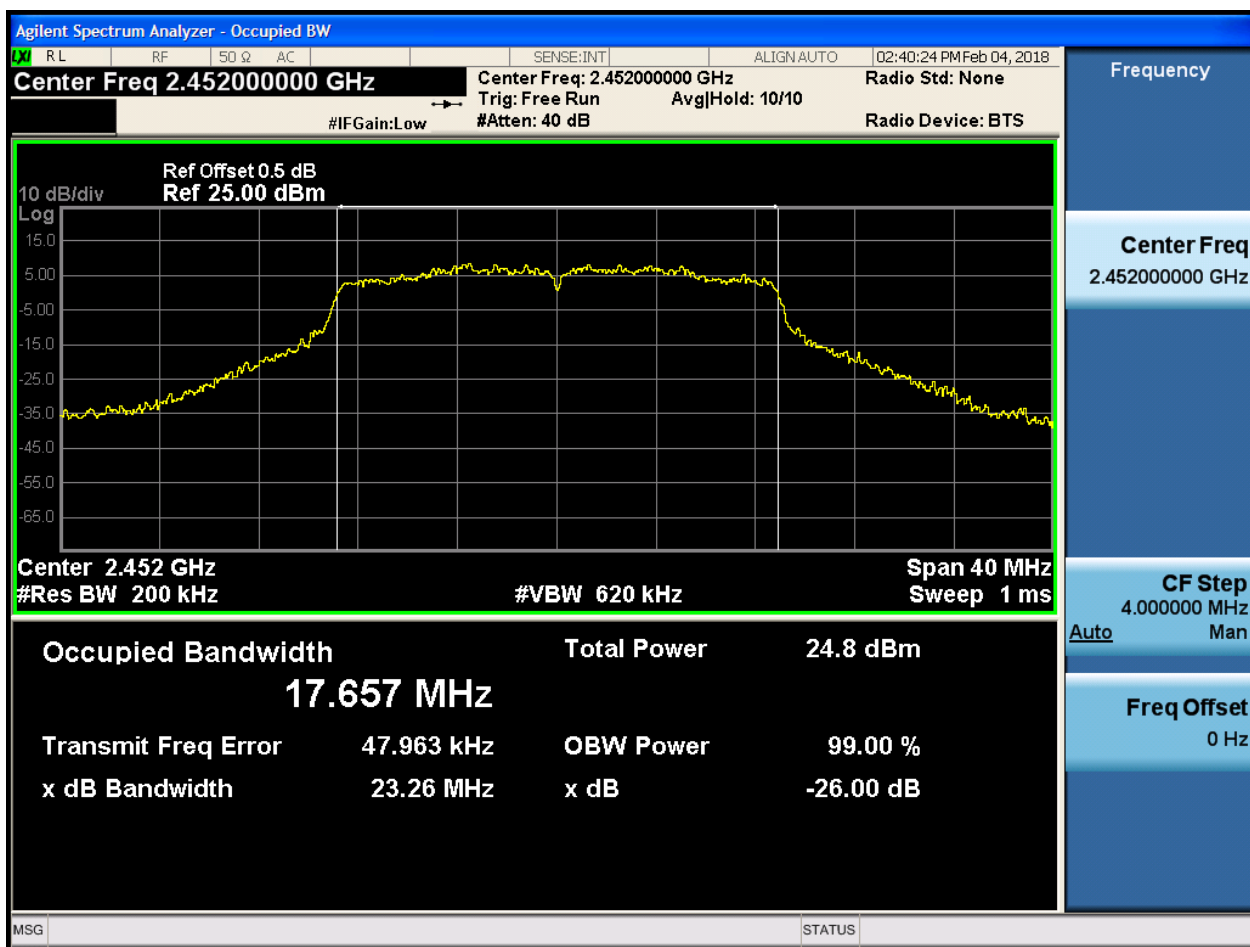


2.21 11N20_H_2452@Ant 1



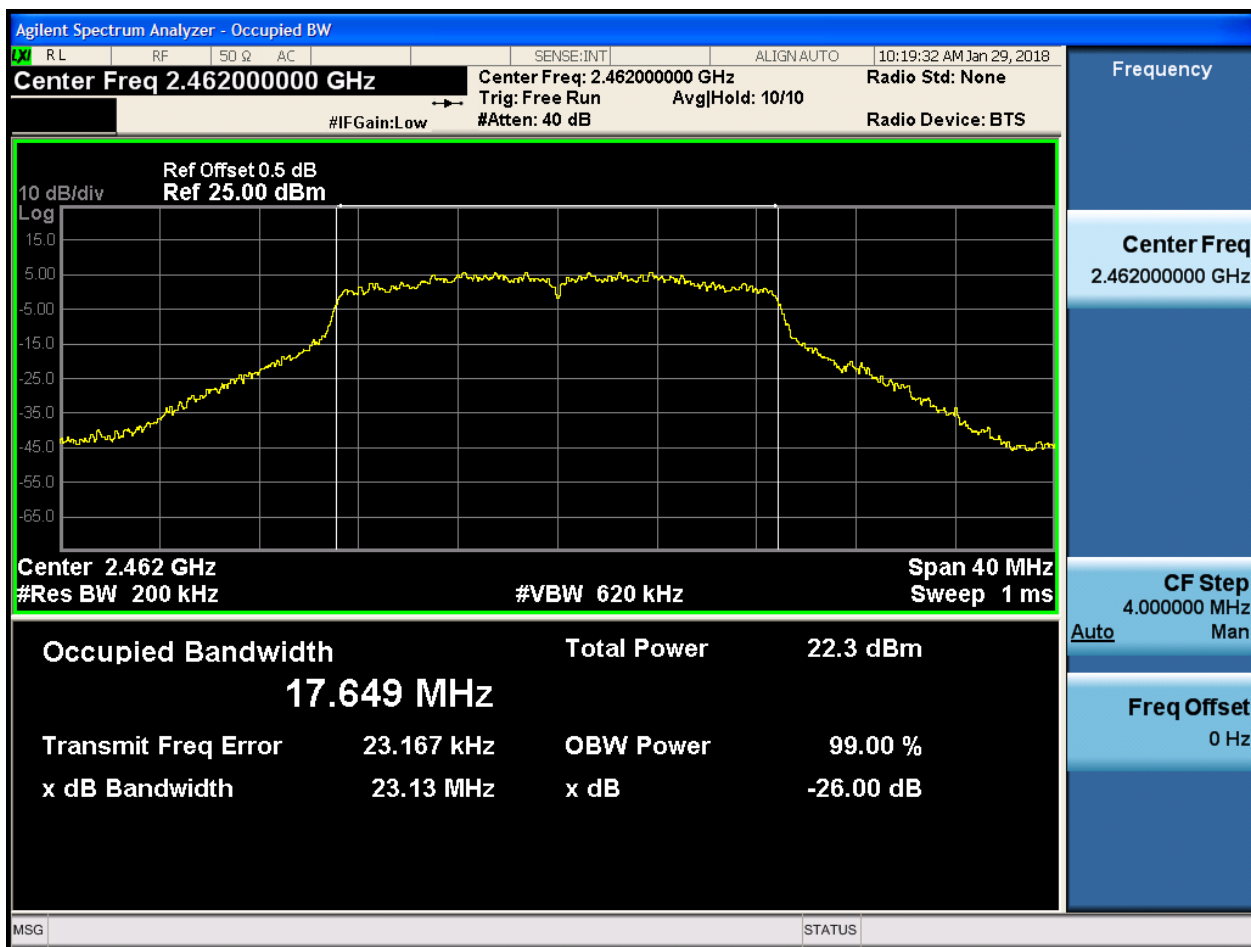


2.22 11N20_H_2452@Ant 2



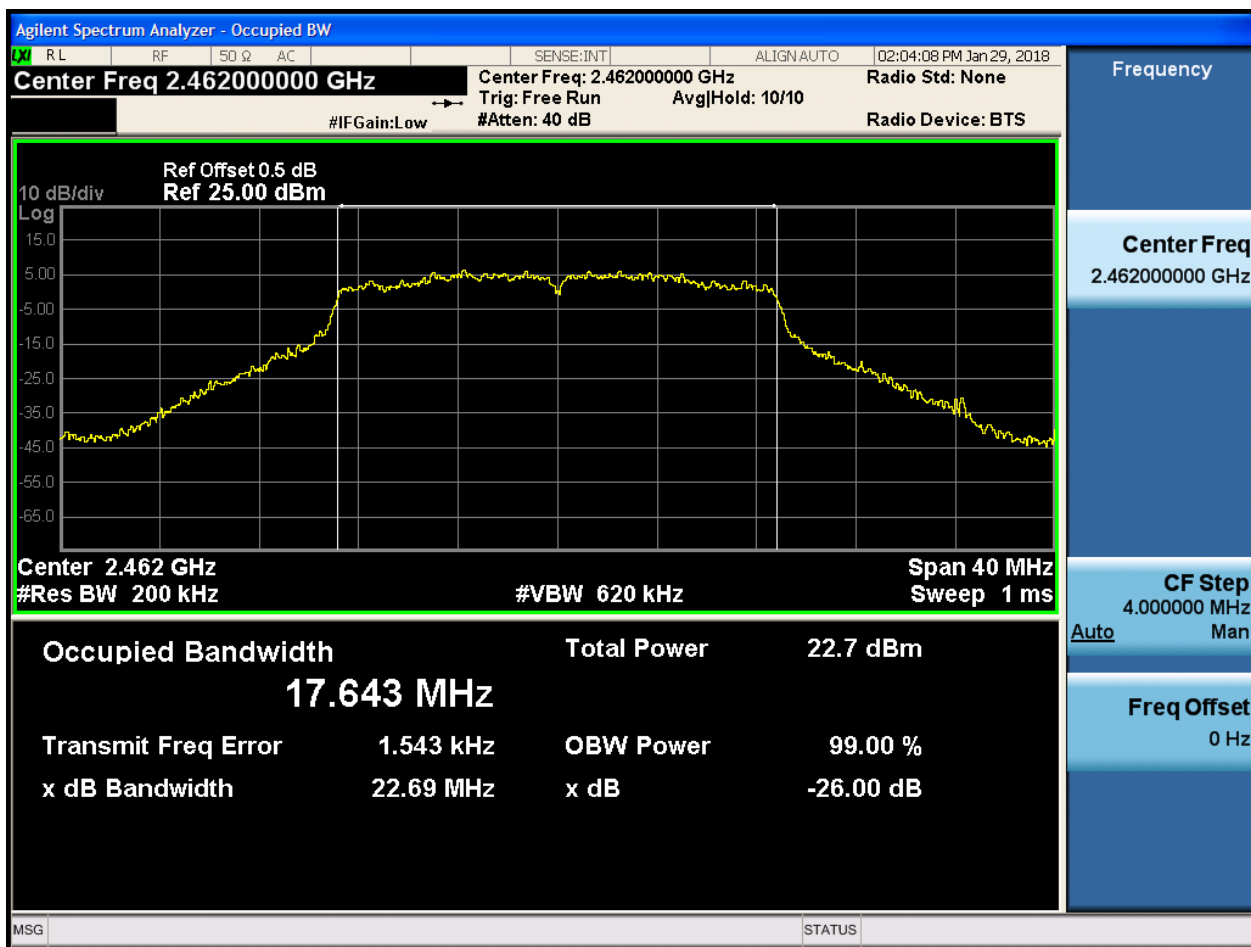


2.23 11N20_H_2462@Ant 1



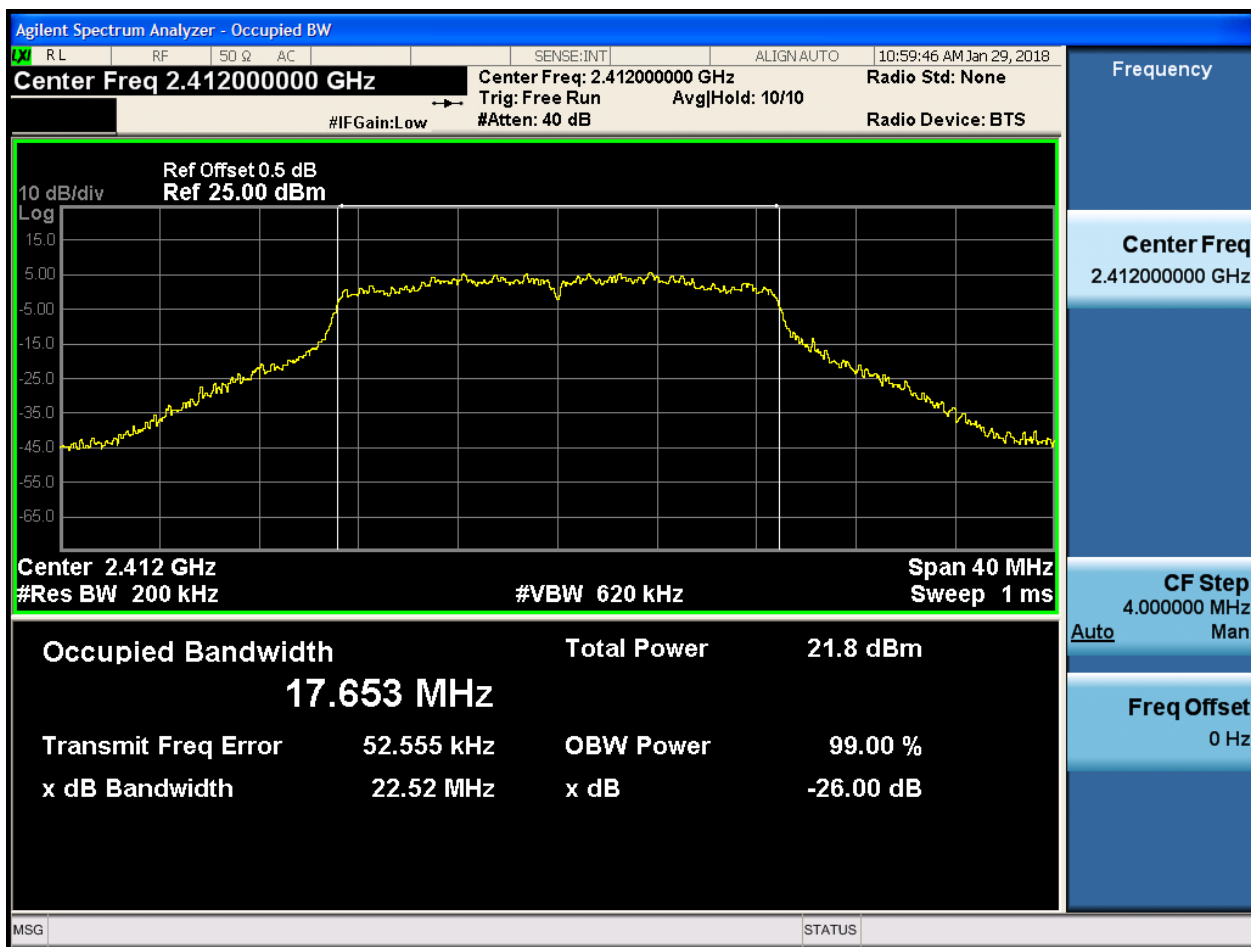


2.24 11N20_H_2462@Ant 2



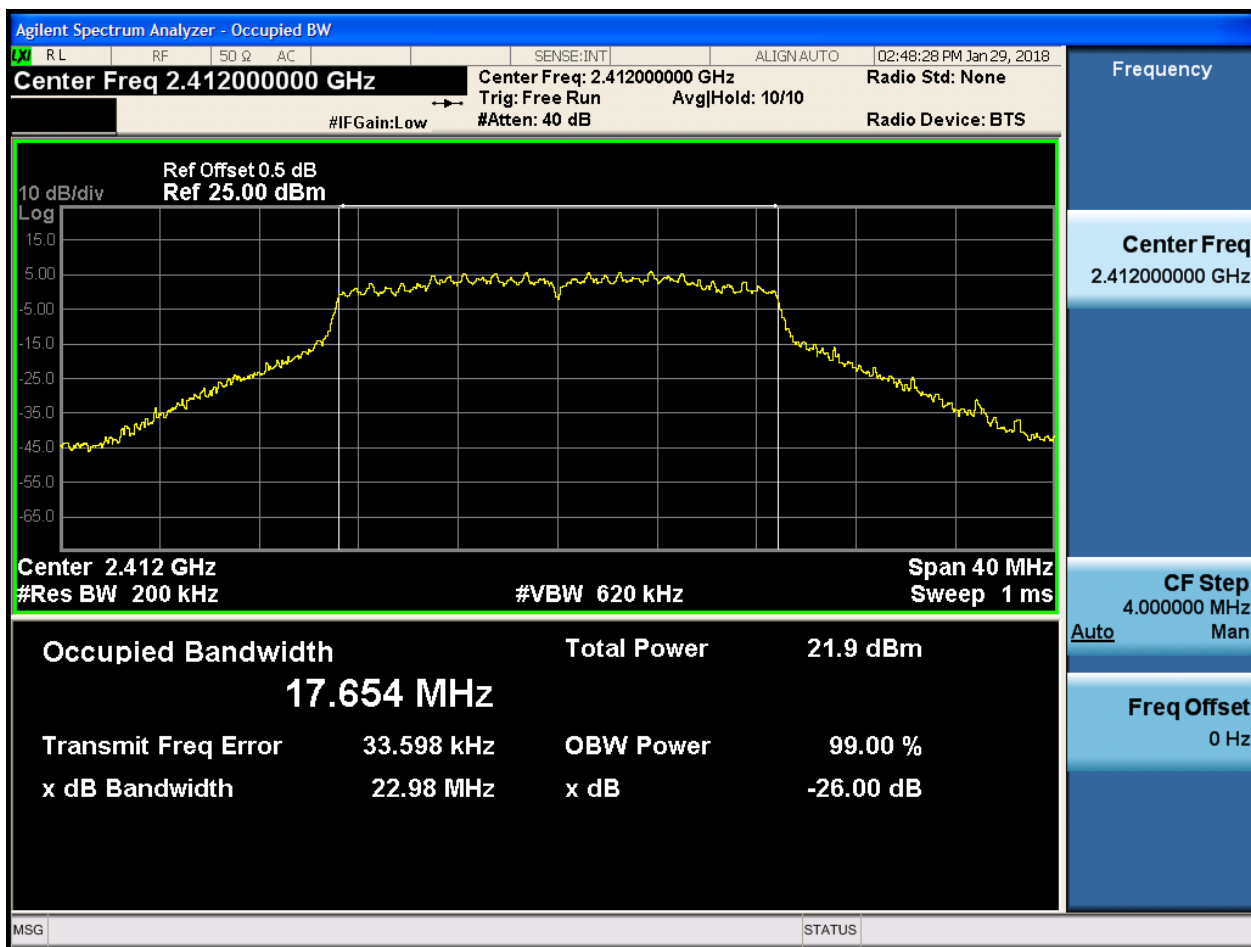


2.25 11N20m_L@Ant 1

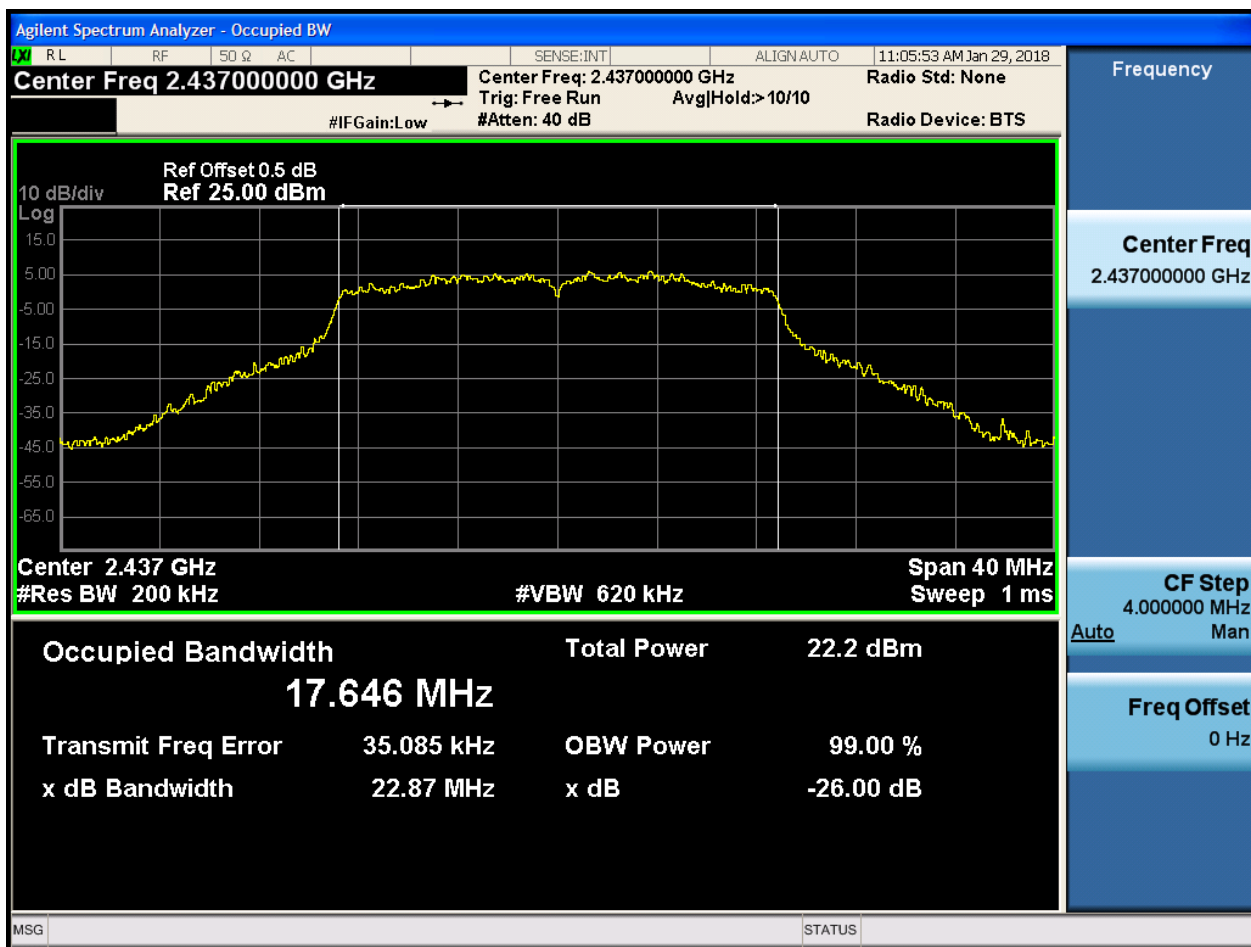




2.26 11N20m_L@Ant 2

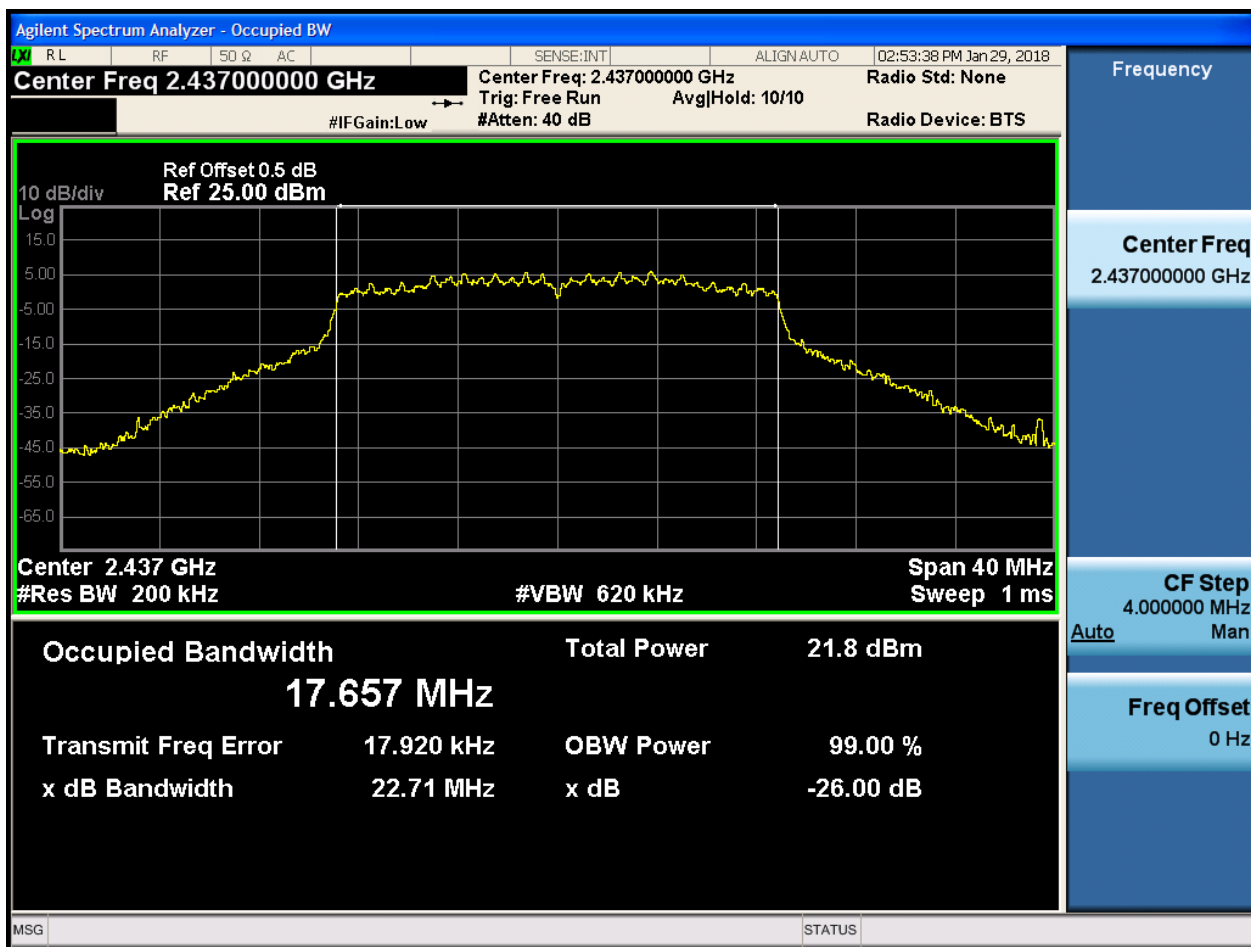


2.27 11N20m_M@Ant 1



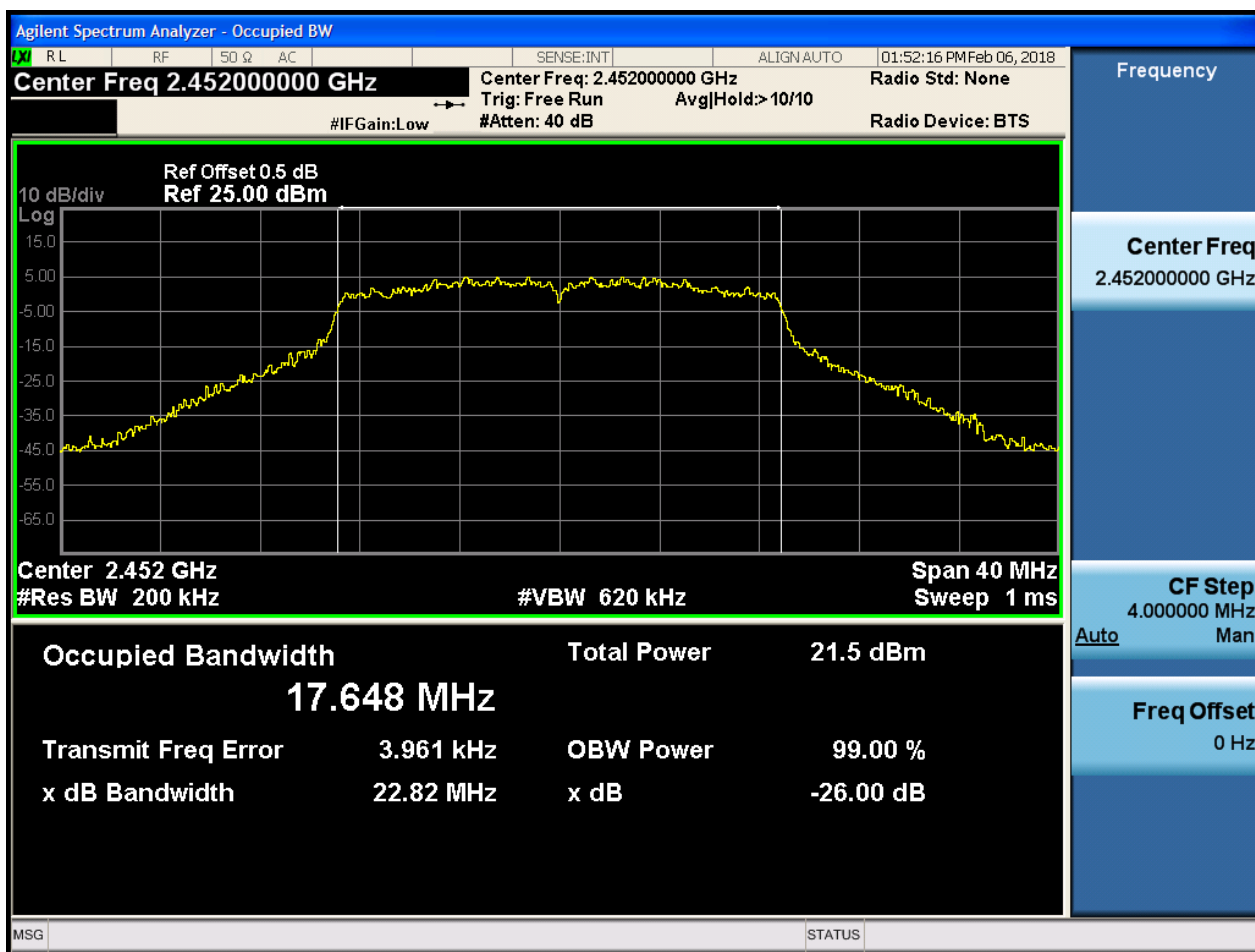


2.28 11N20m_M@Ant 2



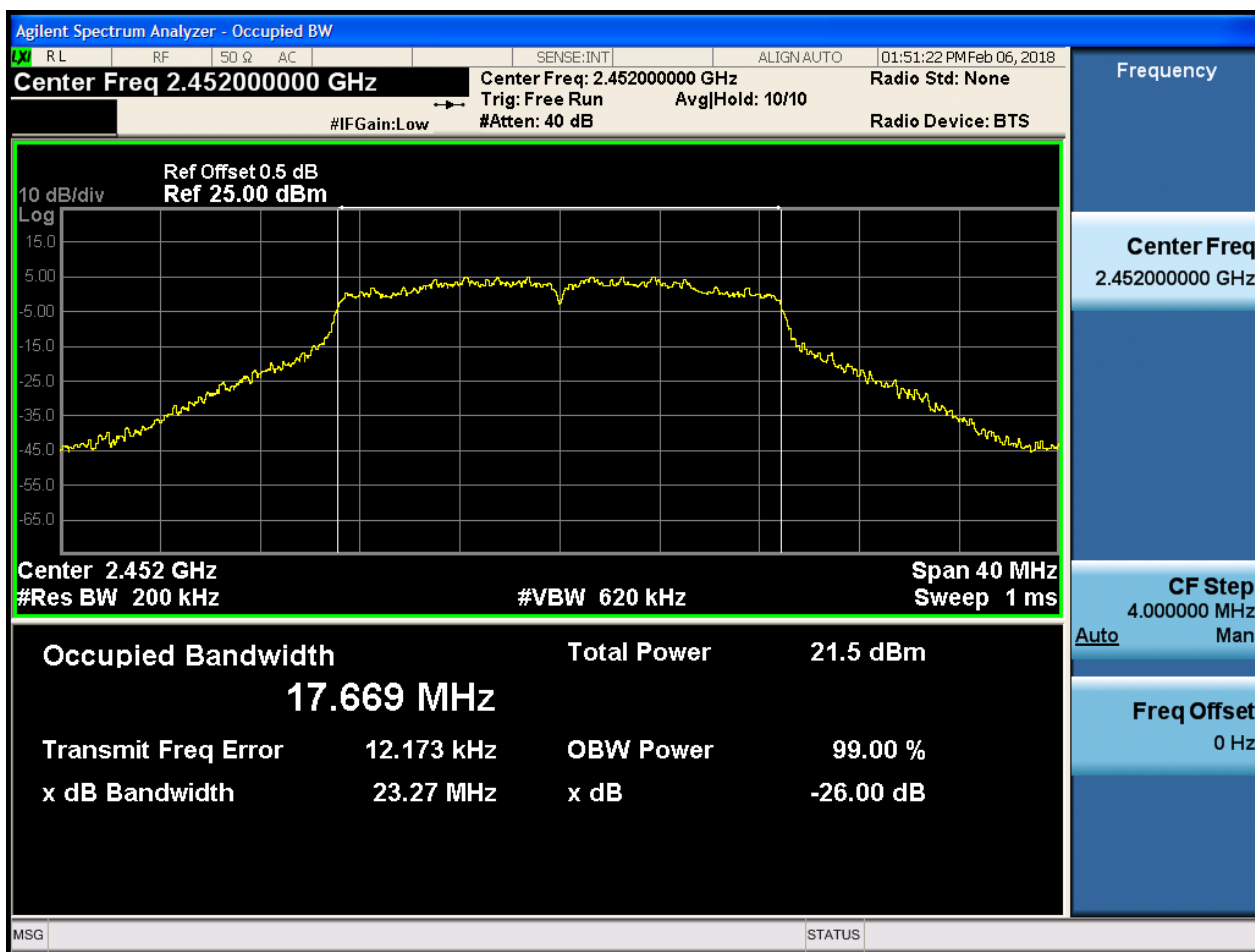


2.29 11N20m_H_2452@Ant 1



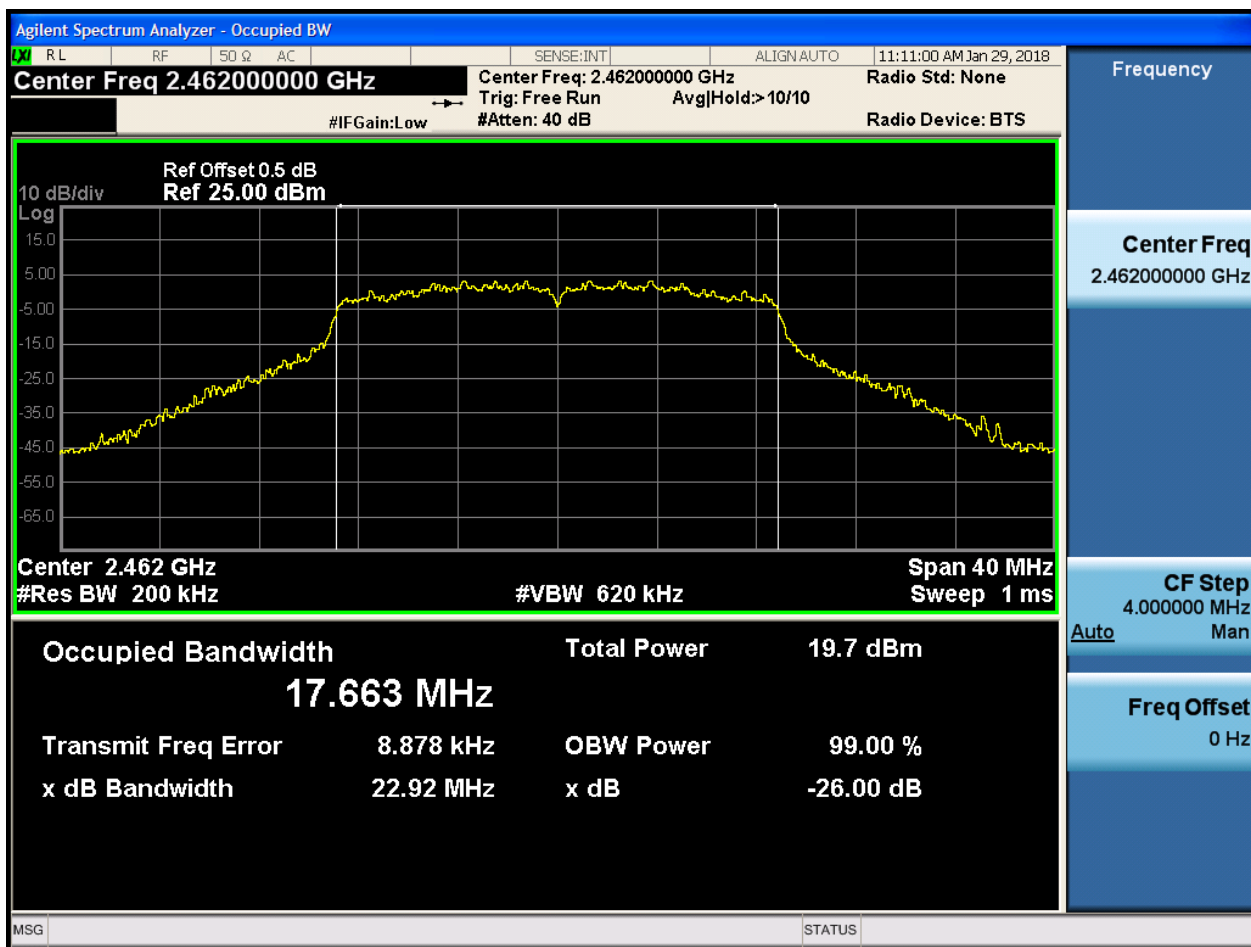


2.30 11N20m_H_2452@Ant 2



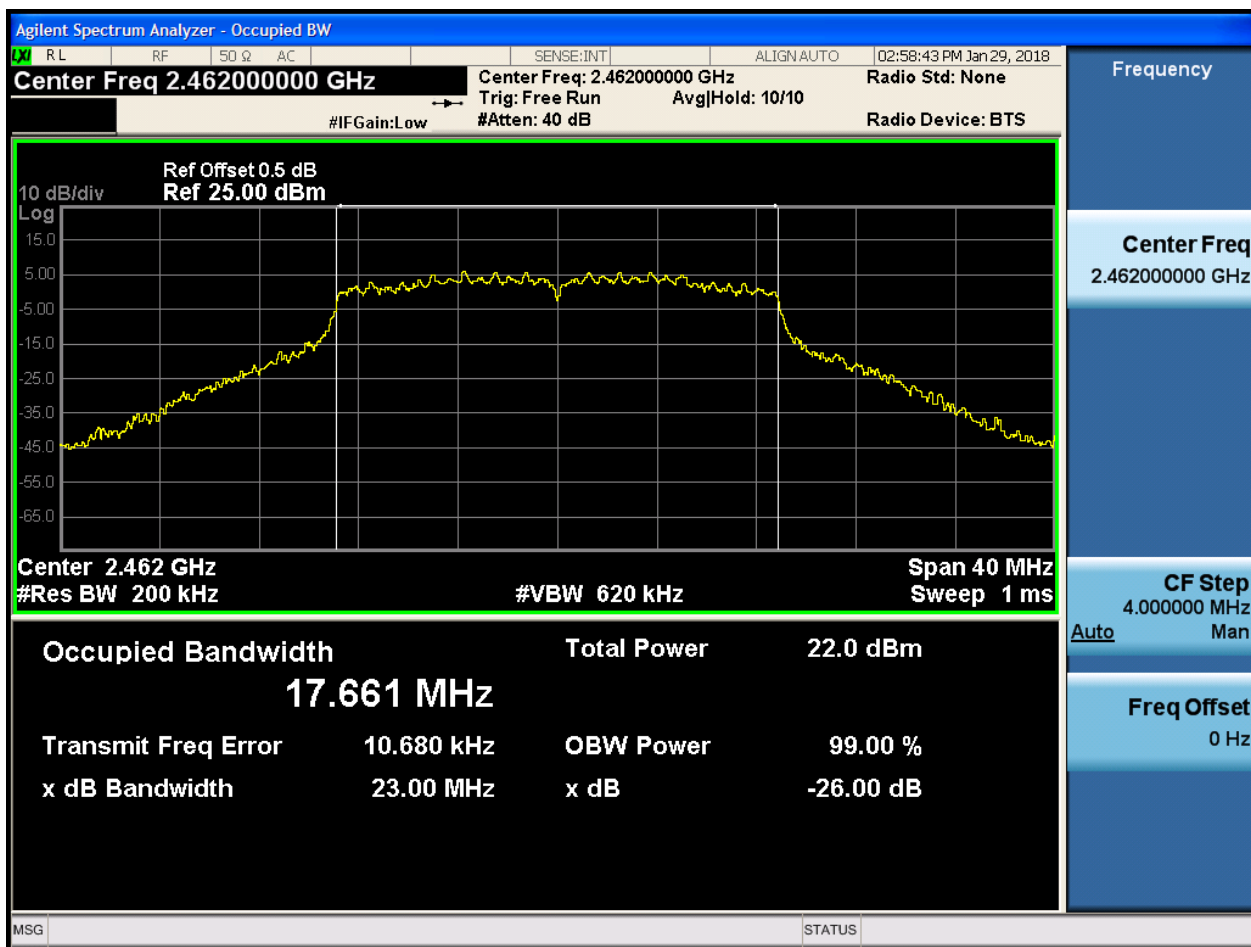


2.31 11N20m_H_2462@Ant 1



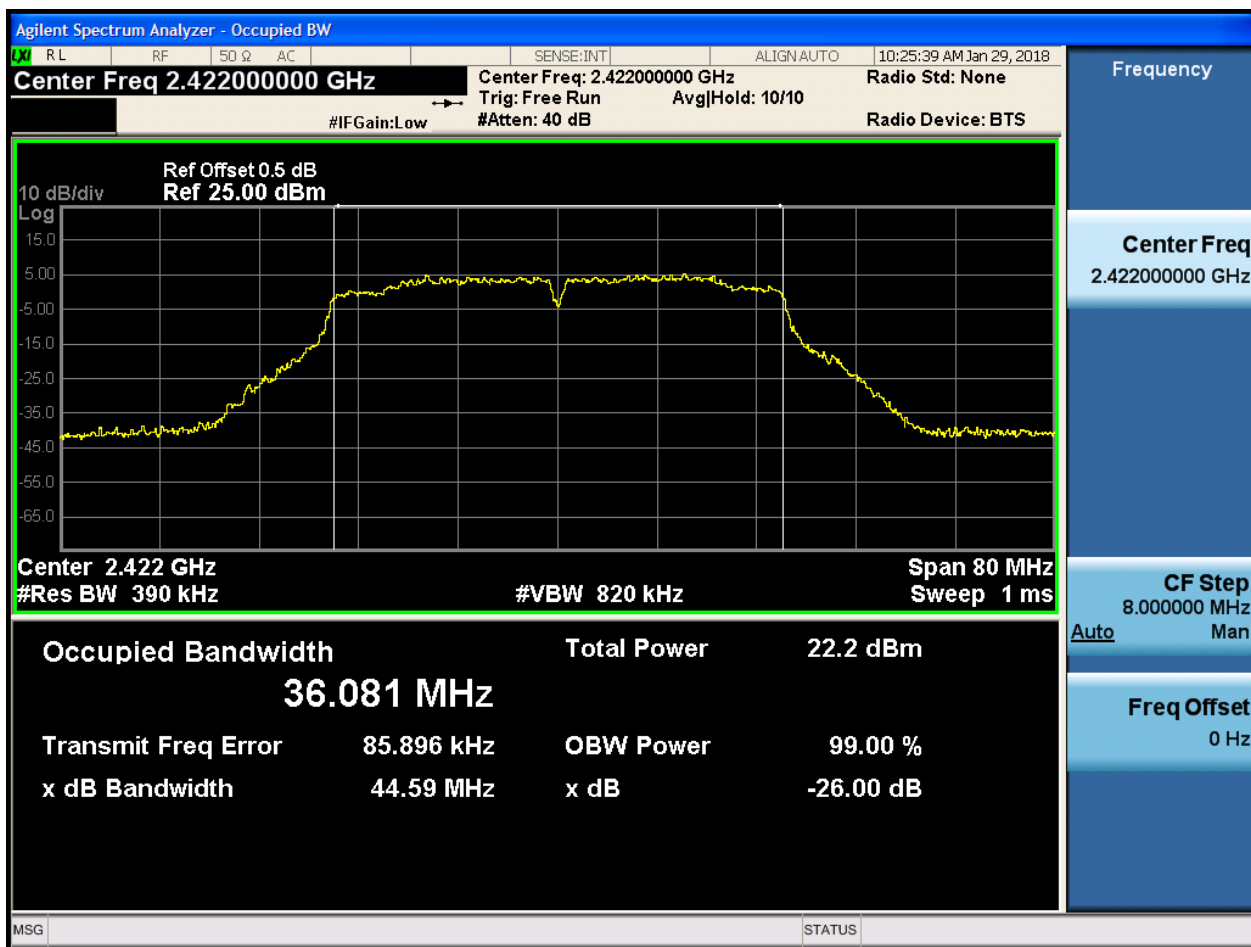


2.32 11N20m_H_2462@Ant 2



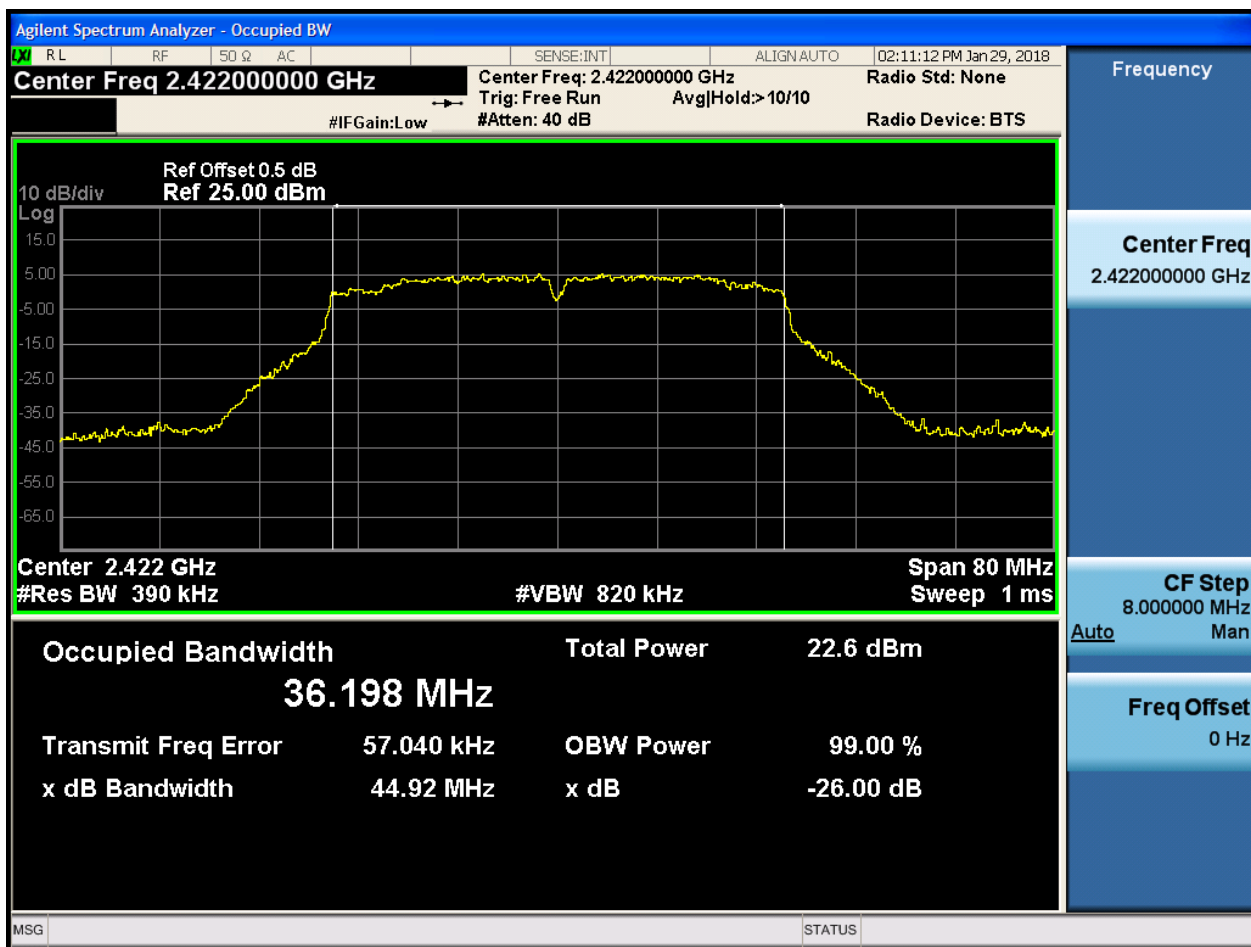


2.33 11N40_L@Ant 1



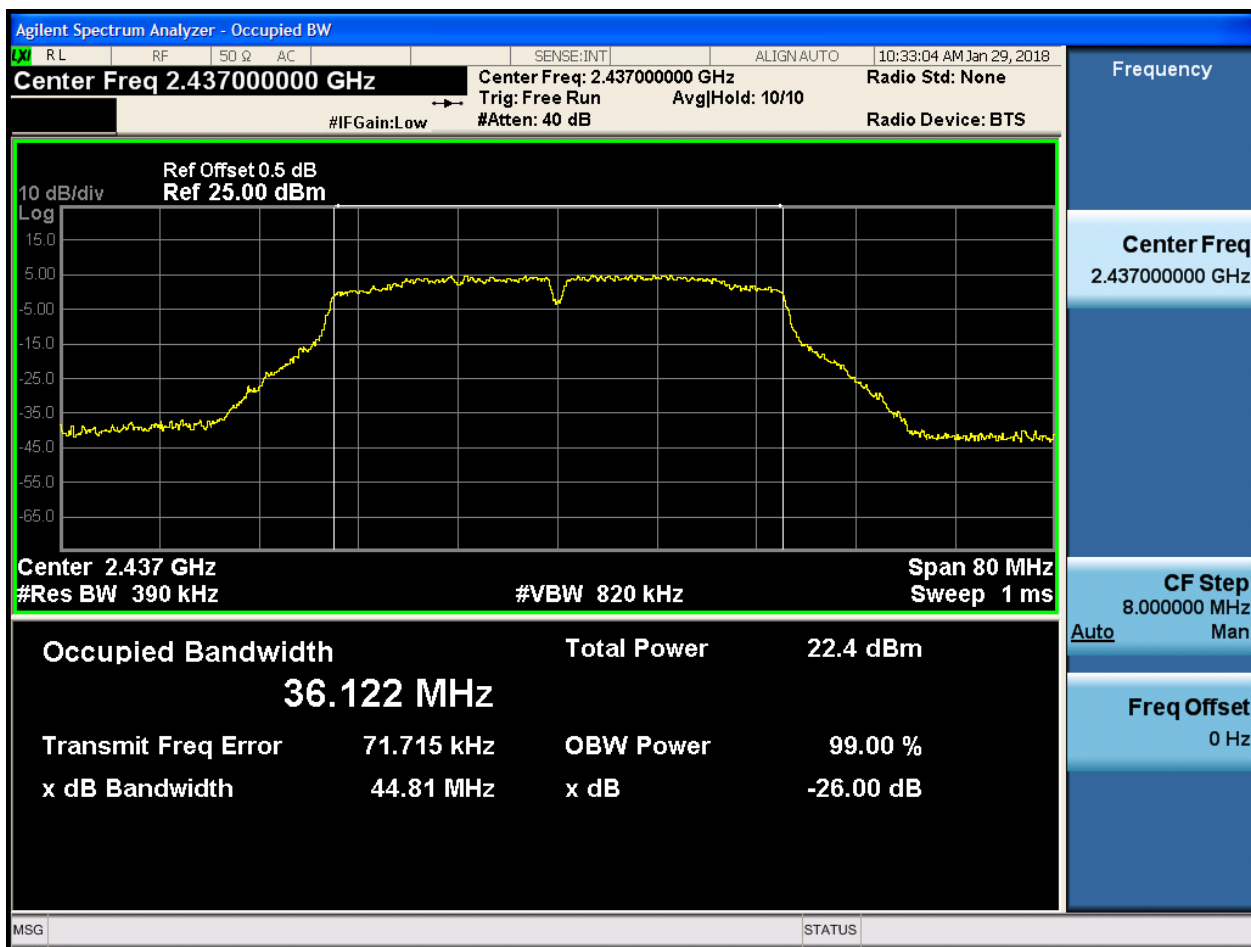


2.34 11N40_L@Ant 2



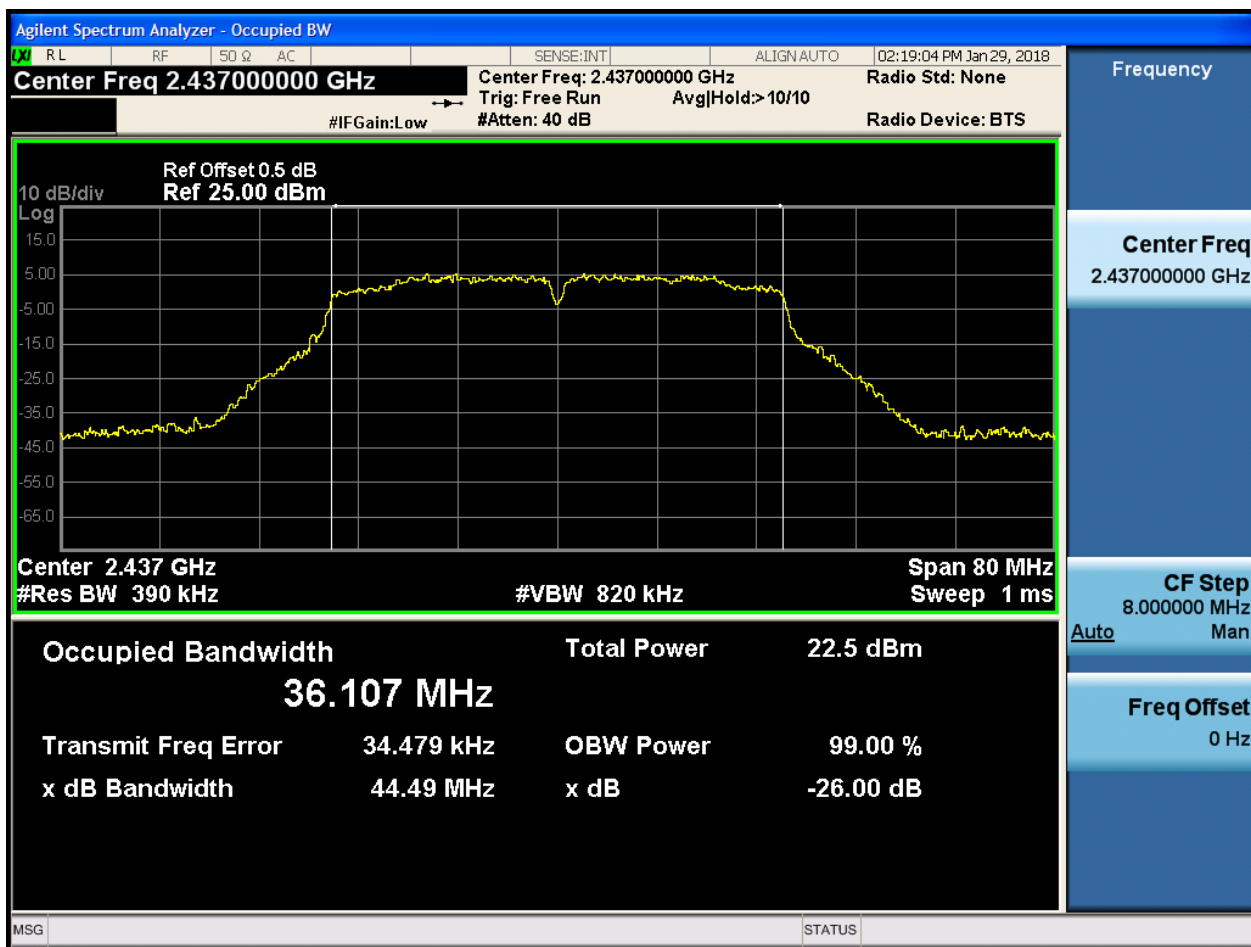


2.35 11N40_M@Ant 1



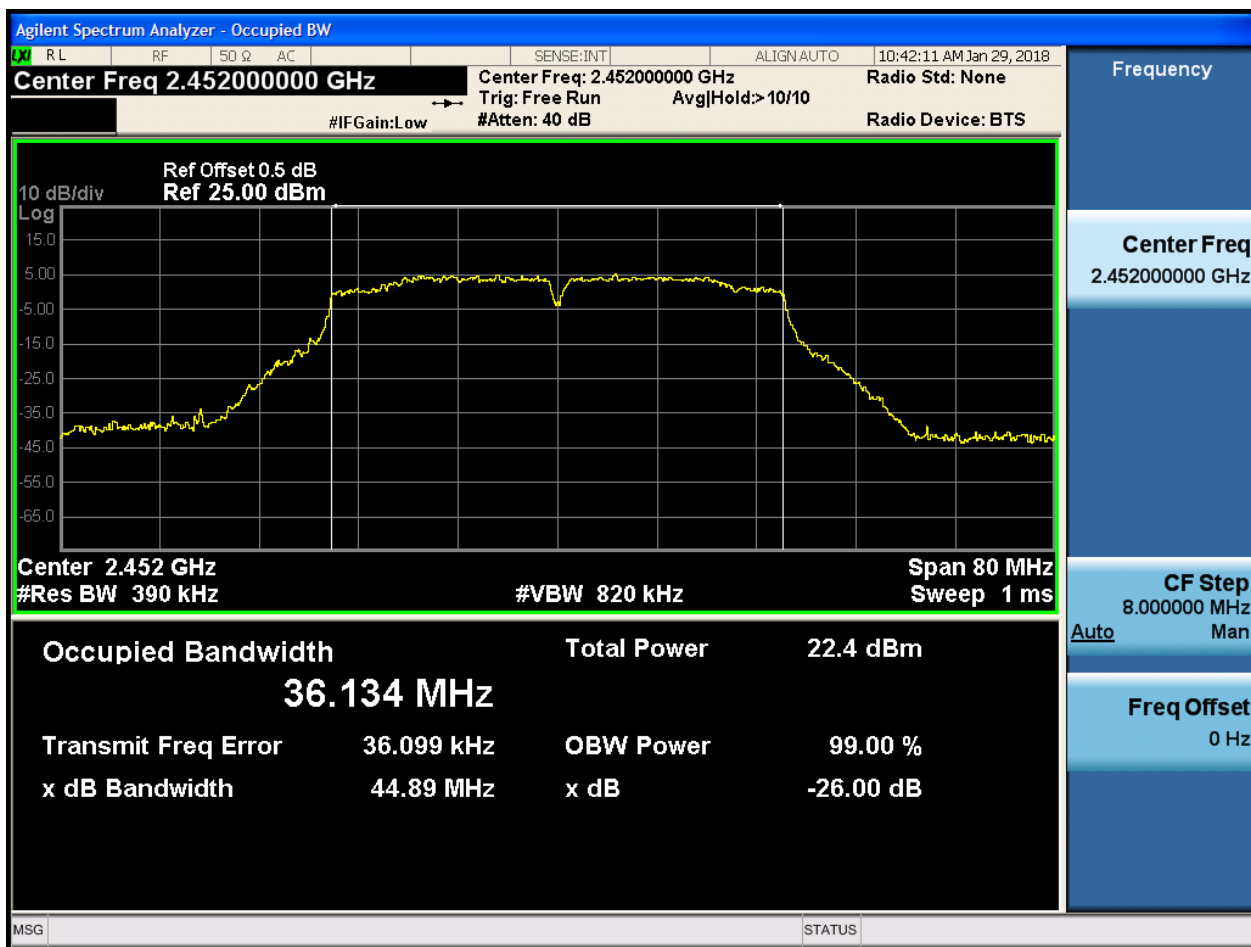


2.36 11N40_M@Ant 2



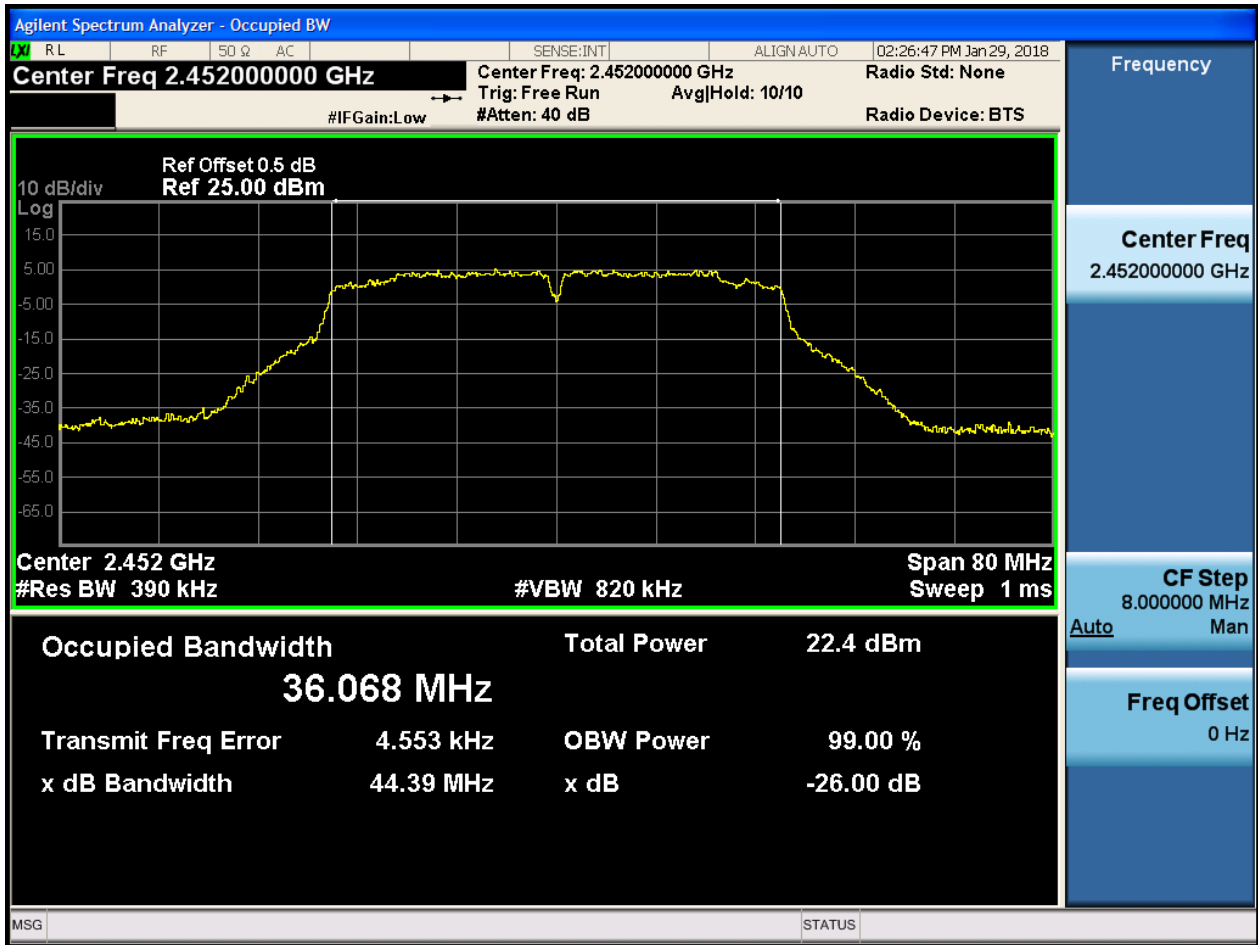


2.37 11N40_H@Ant 1



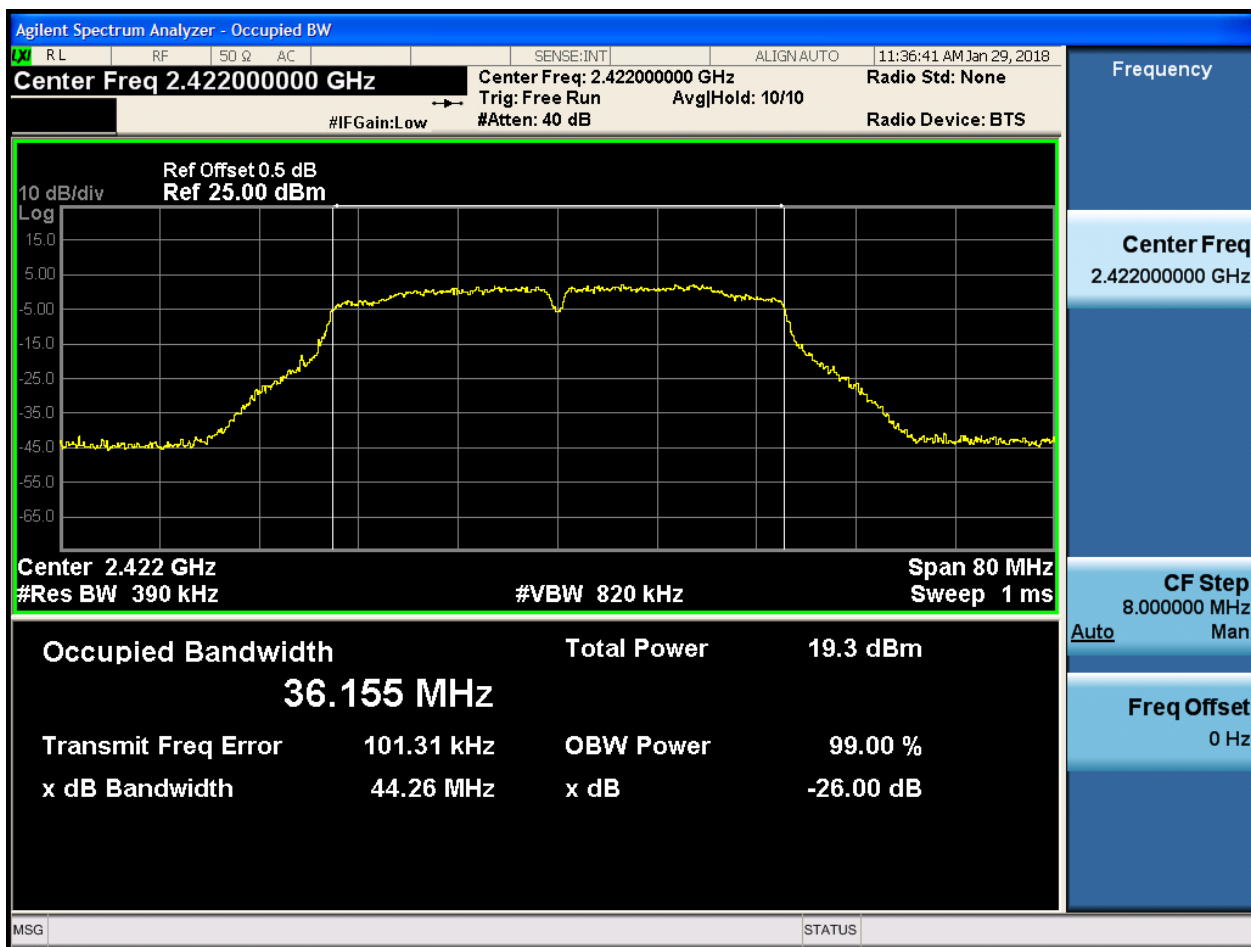


2.38 11N40_H@Ant 2



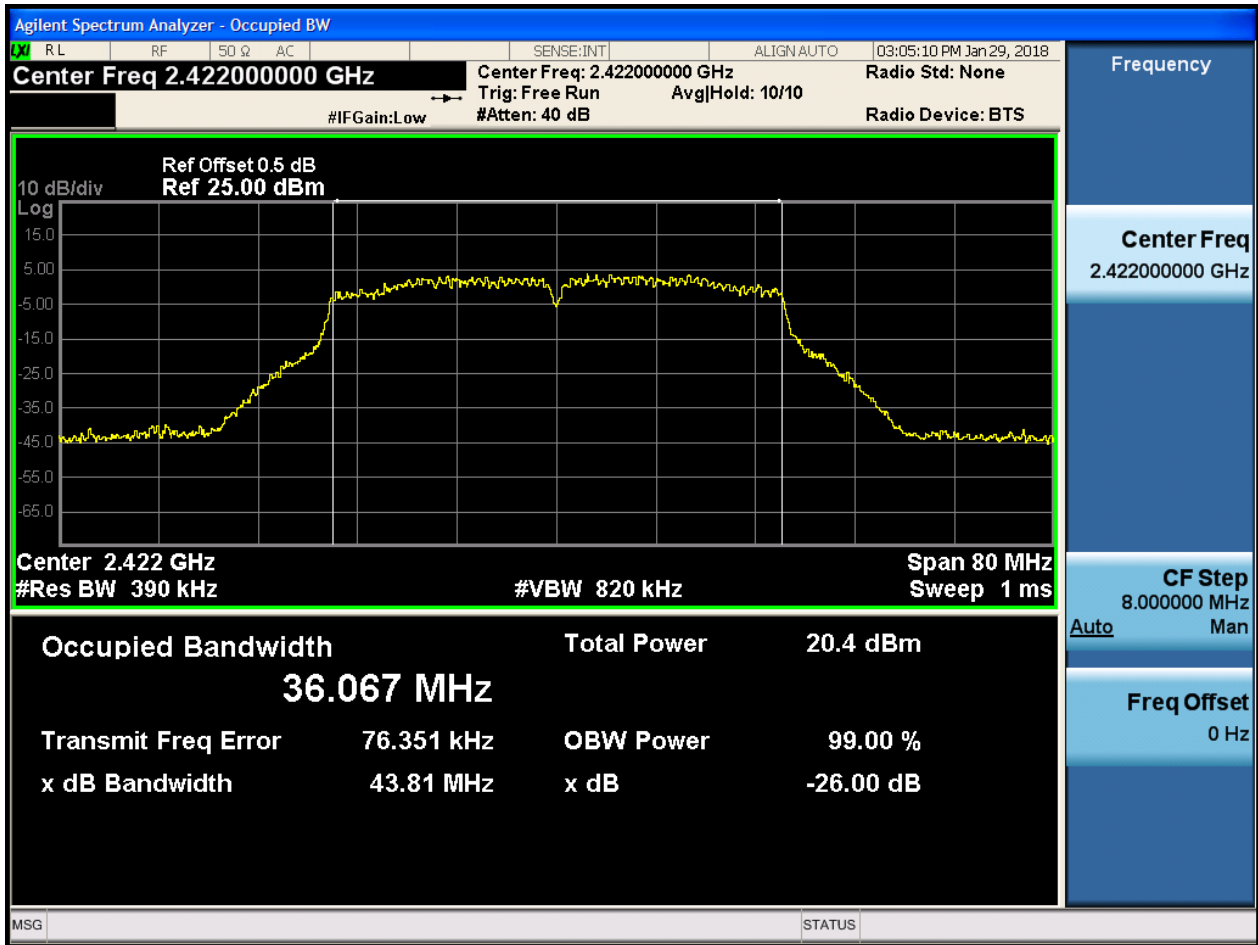


2.39 11N40m_L@Ant 1



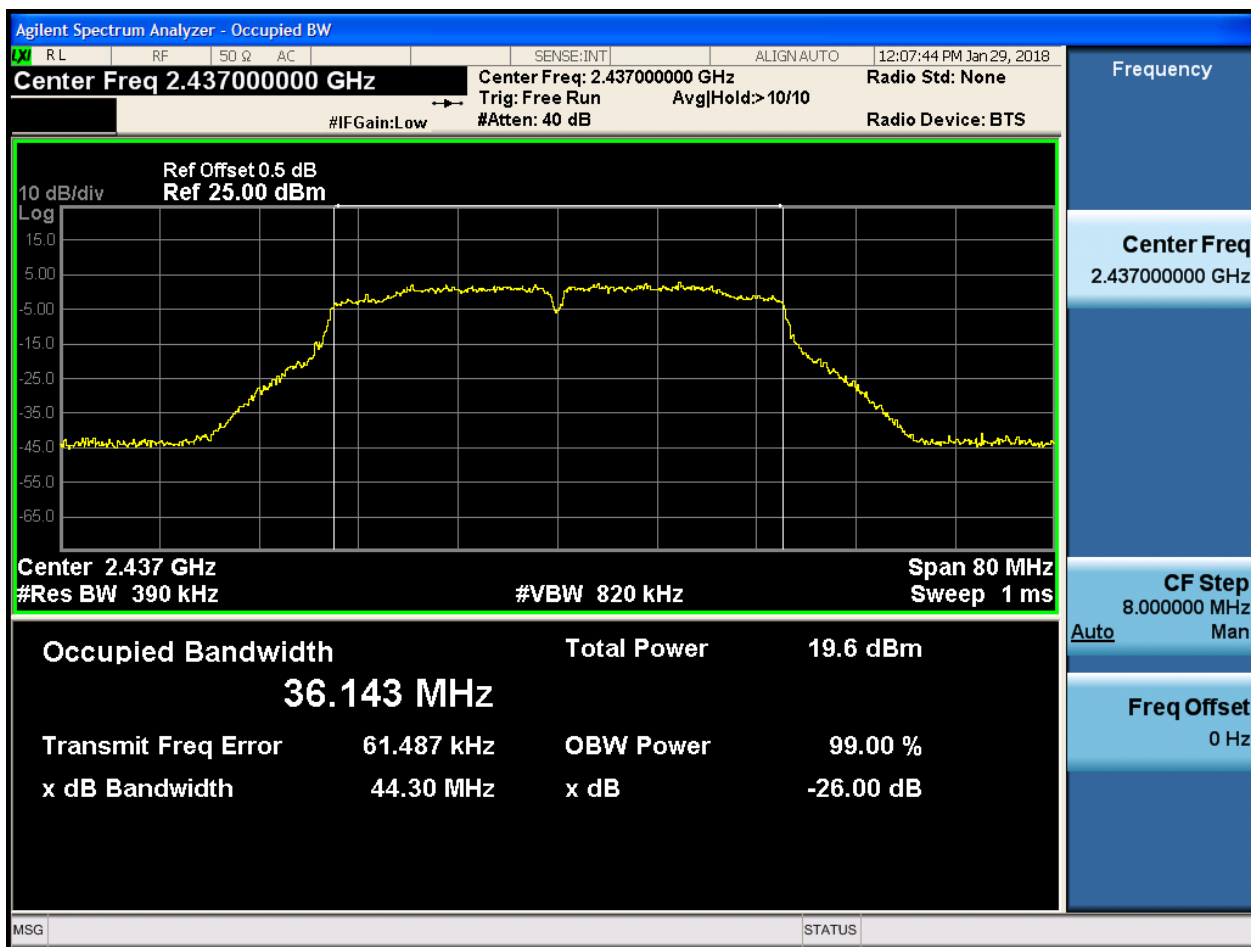


2.40 11N40m_L@Ant 2



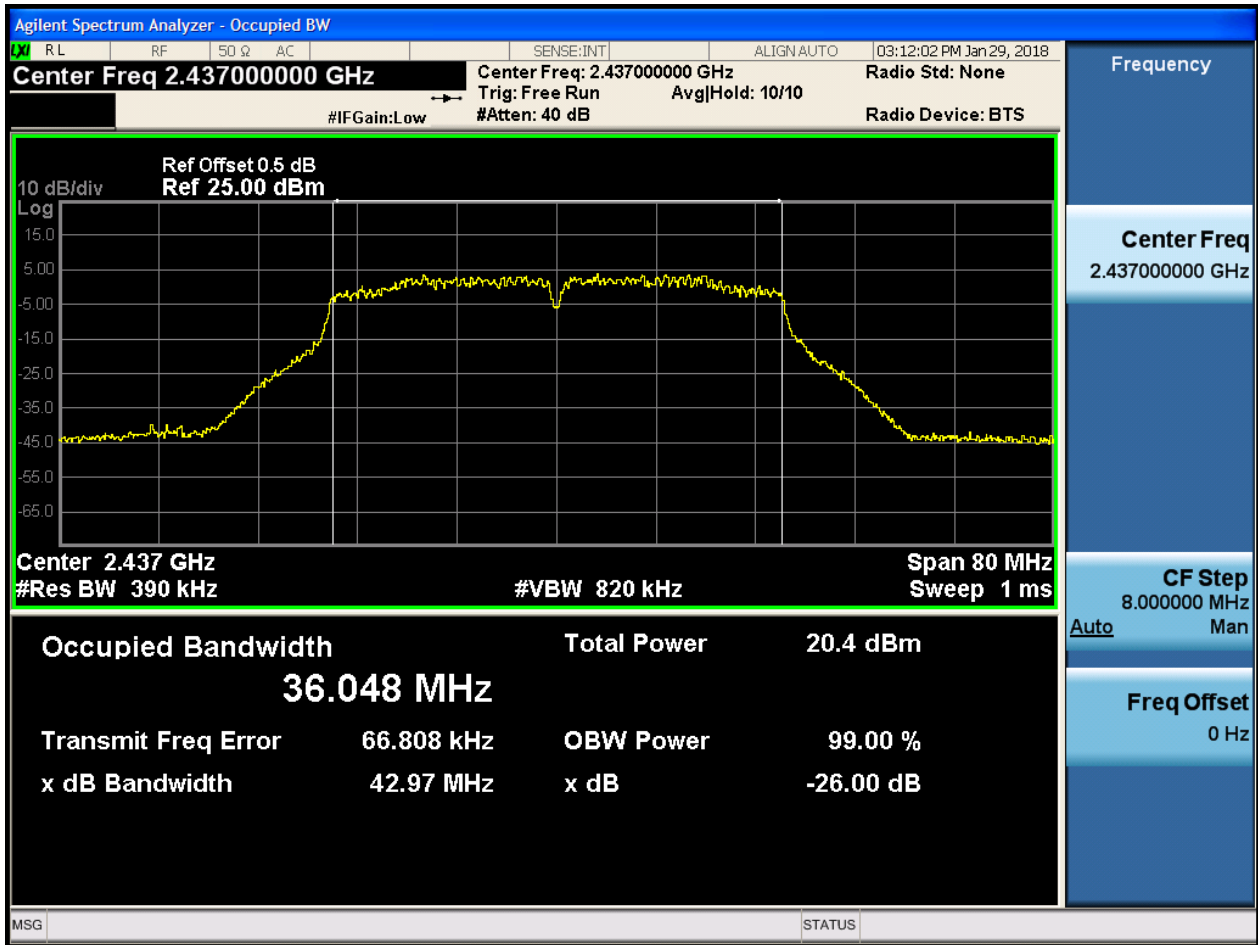


2.41 11N40m_M@Ant 1



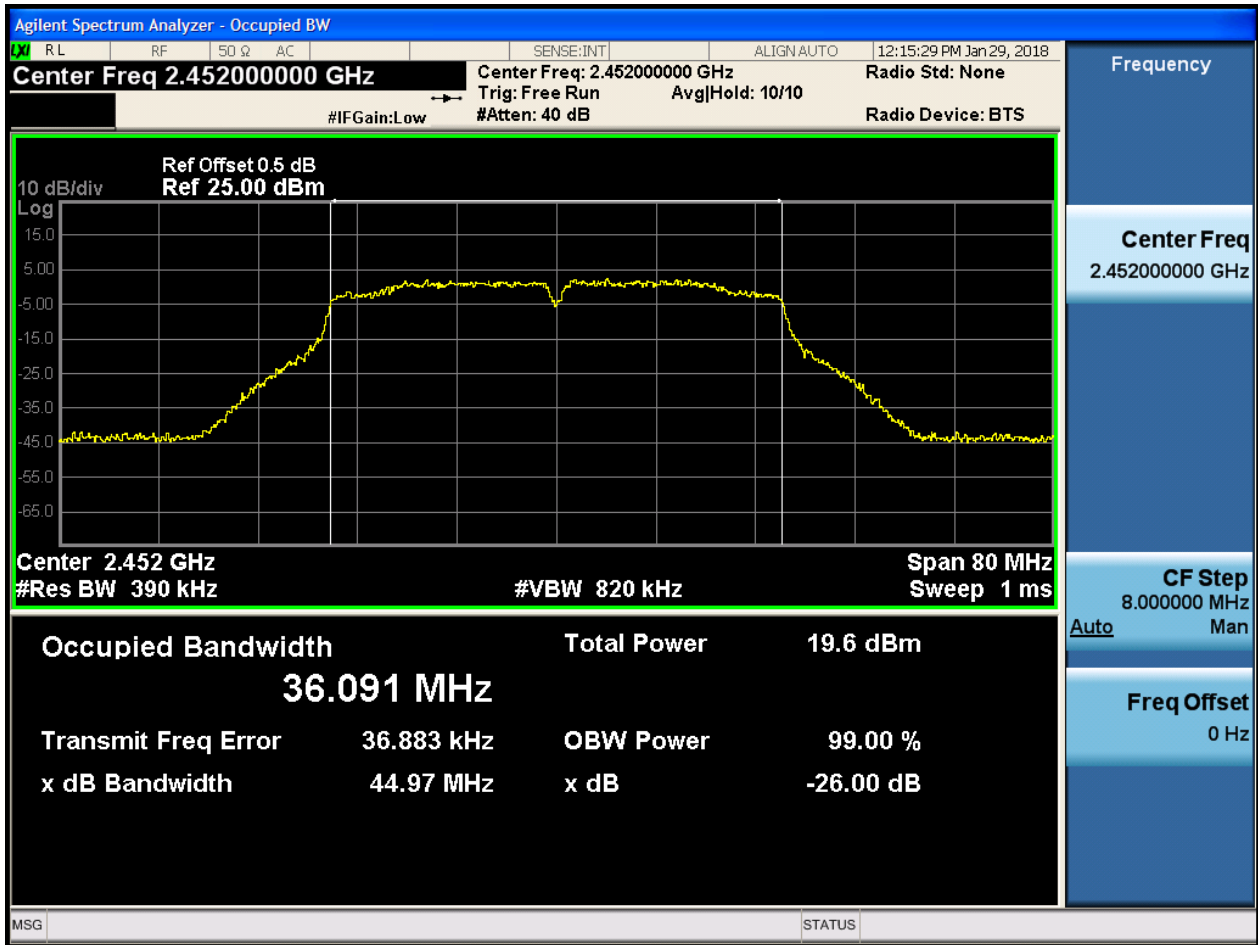


2.42 11N40m_M@Ant 2



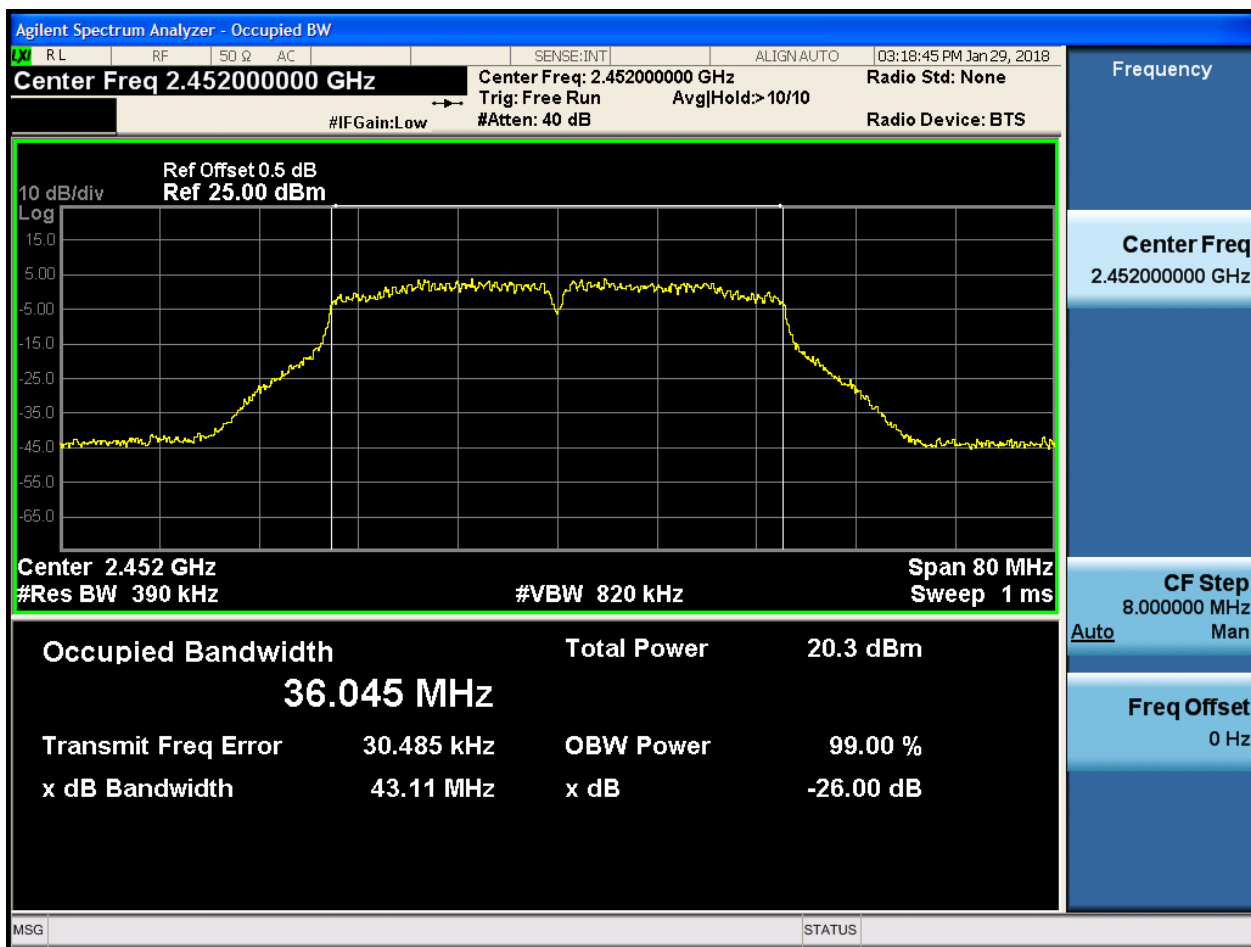


2.43 11N40m_H@Ant 1





2.44 11N40m_H@Ant 2



Appendix C: Duty Cycle

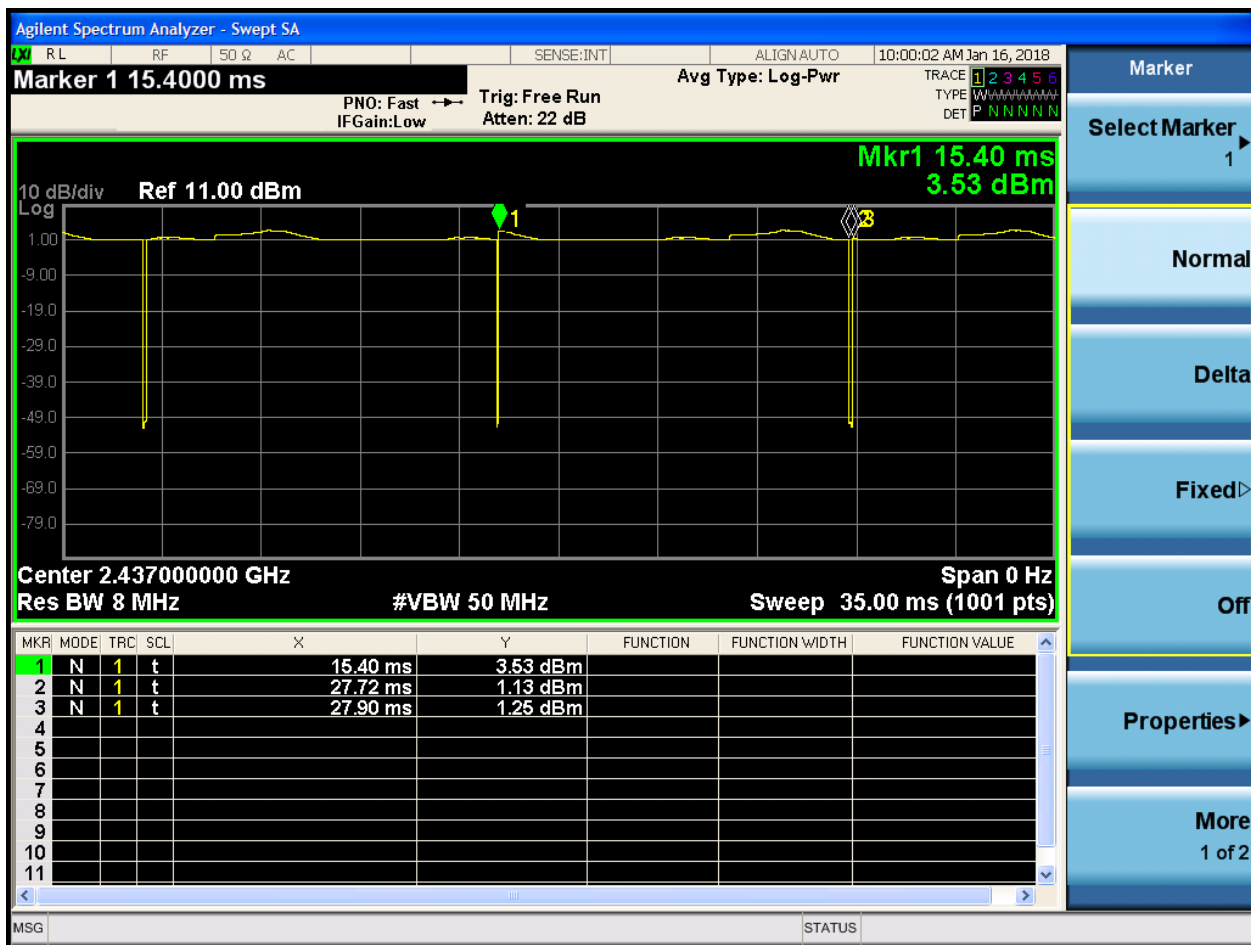
Part I - Test Results

Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6 ,CH10,CH11	Ant 1	98
11B	CH1,CH6,CH10,CH11	Ant 2	99
11G	CH1,CH6, CH10,CH11	Ant 1	95
11G	CH1,CH6, CH10,CH11	Ant 2	95
11N20SISO	CH1,CH6, CH10,CH11	Ant 1	95
11N20SISO	CH1,CH6, CH10,CH11	Ant 2	96
11N20MIMO	CH1,CH6, CH10,CH11	Ant 1	84
11N20MIMO	CH1,CH6, CH10,CH11	Ant 2	84
11N40SISO	CH3,CH6,CH9	Ant 1	84
11N40SISO	CH3,CH6,CH9	Ant 2	84
11N40MIMO	CH3,CH6,CH9	Ant 1	84
11N40MIMO	CH3,CH6,CH9	Ant 2	83



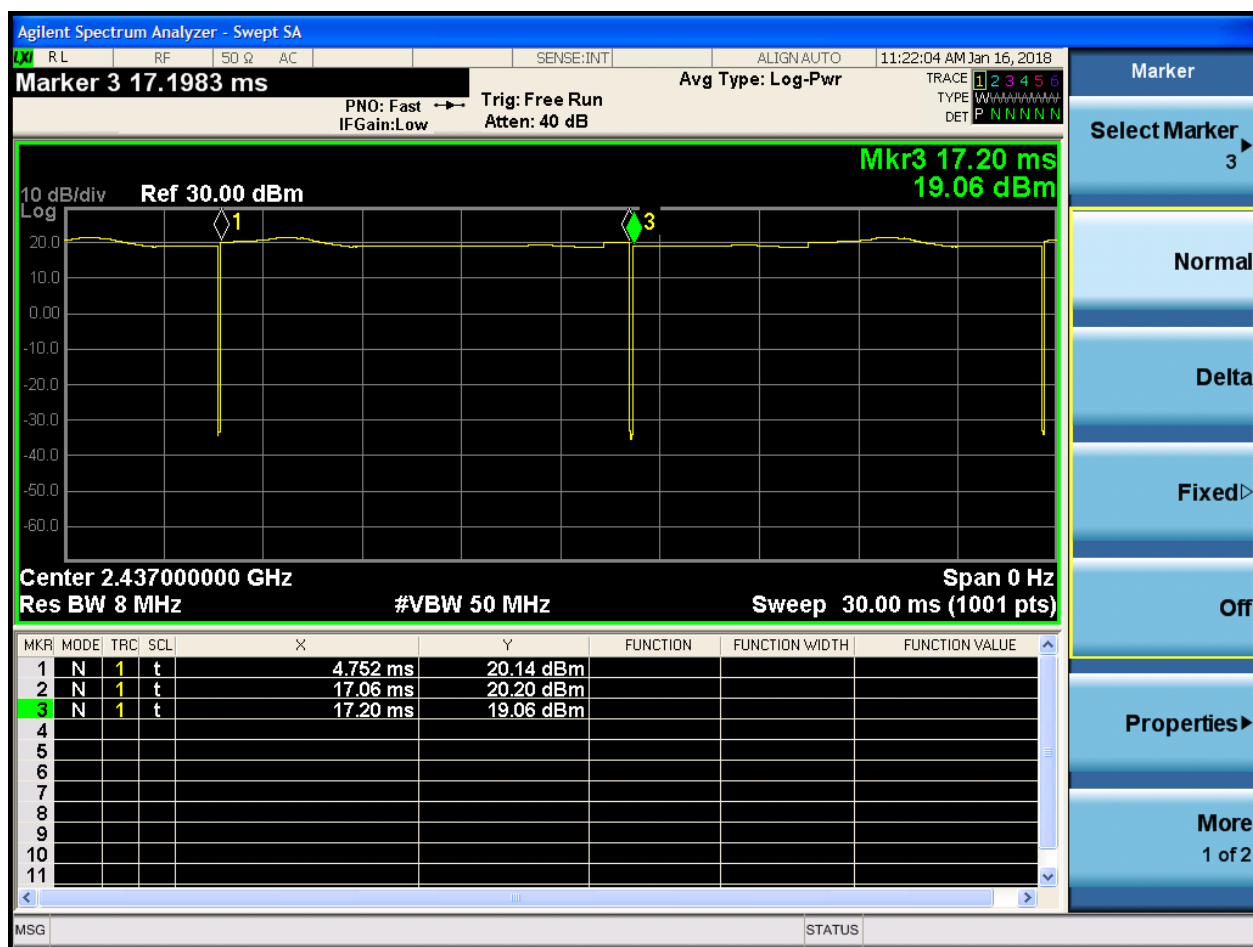
Part II - Test Plots

11B_@Ant1





11B_@Ant2





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 10:05:12 AM Jan 16, 2018

Marker 3 3.29280 ms Avg Type: Log-Pwr

PNO: Fast Trg: Free Run
IFGain:Low Atten: 22 dB

TRACE 1 2 3 4 5 6
TYPE W W W W W W W W
DET P N N N N N N

10 dB/div Ref 11.00 dBm

Mkr3 3.293 ms
-0.33 dBm

Center 2.437000000 GHz Span 0 Hz
Res BW 8 MHz #VBW 50 MHz Sweep 6.533 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	1.137 ms	-0.06 dBm			
2	N	1	t	3.182 ms	0.73 dBm			
3	N	1	t	3.293 ms	-0.33 dBm			
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr→CF

Mkr→Ref Lvl

More
1 of 2



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 11:24:55 AM Jan 16, 2018

Marker 2 4.60880 ms Avg Type: Log-Pwr

PNO: Fast Trg: Free Run
IFGain:Low Atten: 40 dB

TRACE 1 2 3 4 5 6
TYPE W W W W W W W W
DET P N N N N N N

10 dB/div Ref 30.00 dBm

Mkr2 4.609 ms 19.57 dBm

Center 2.437000000 GHz Span 0 Hz
Res BW 8 MHz #VBW 50 MHz Sweep 5.600 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	2.568 ms	19.54 dBm			
2	N	1	t	4.609 ms	19.57 dBm			
3	N	1	t	4.726 ms	19.88 dBm			
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Marker

Select Marker 2

Normal

Delta

Fixed

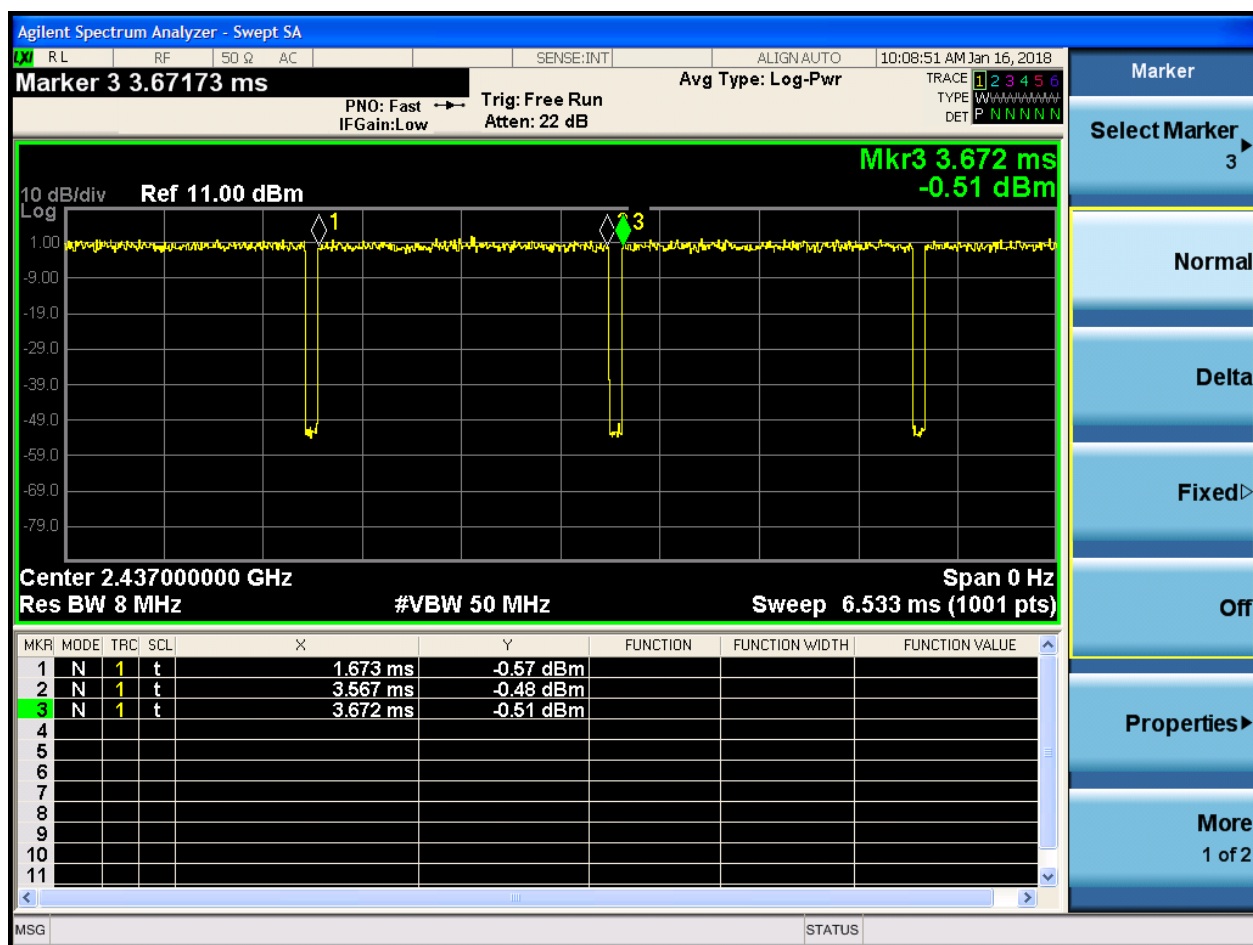
Off

Properties

More 1 of 2



11N20SISO_@Ant1





Agilent Spectrum Analyzer - Swept SA

Marker 1 2.17013 ms

PNO: Fast → Trig: Free Run
IFGain: Low Atten: 40 dB

Avg Type: Log-Pwr

TRACE 1 2 3 4 5 6
TYPE W W W W W W W W
DET P N N N N N N

10 dB/div Ref 30.00 dBm

Mkr1 2.170 ms 19.97 dBm

Center 2.437000000 GHz Span 0 Hz
Res BW 8 MHz #VBW 50 MHz Sweep 5.600 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	2.170 ms	19.97 dBm			
2	N	1	t	4.077 ms	16.23 dBm			
3	N	1	t	4.161 ms	19.64 dBm			
4								
5								
6								
7								
8								
9								
10								
11								

Marker

Select Marker 1

Normal

Delta

Fixed

Off

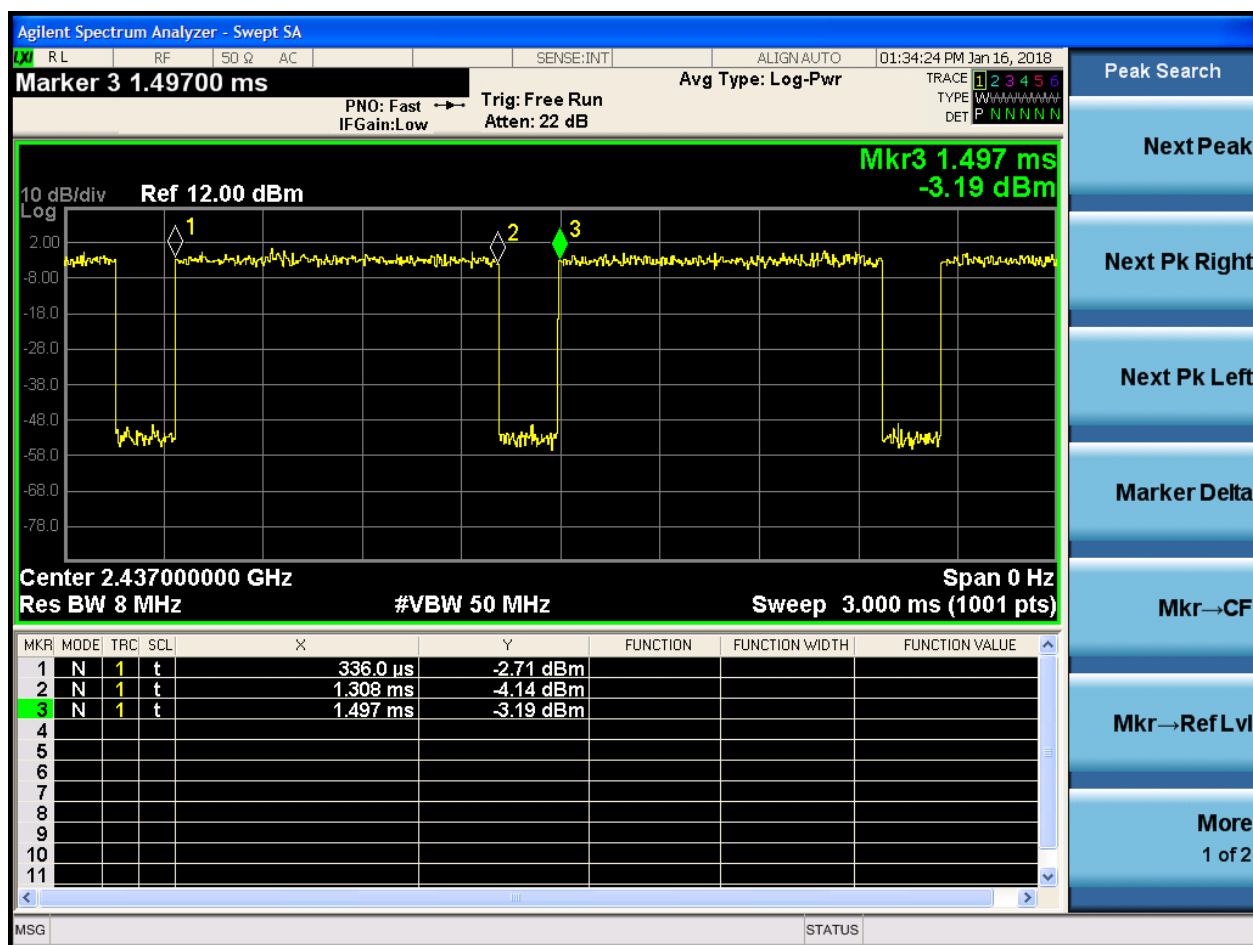
Properties

More 1 of 2

MSG STATUS

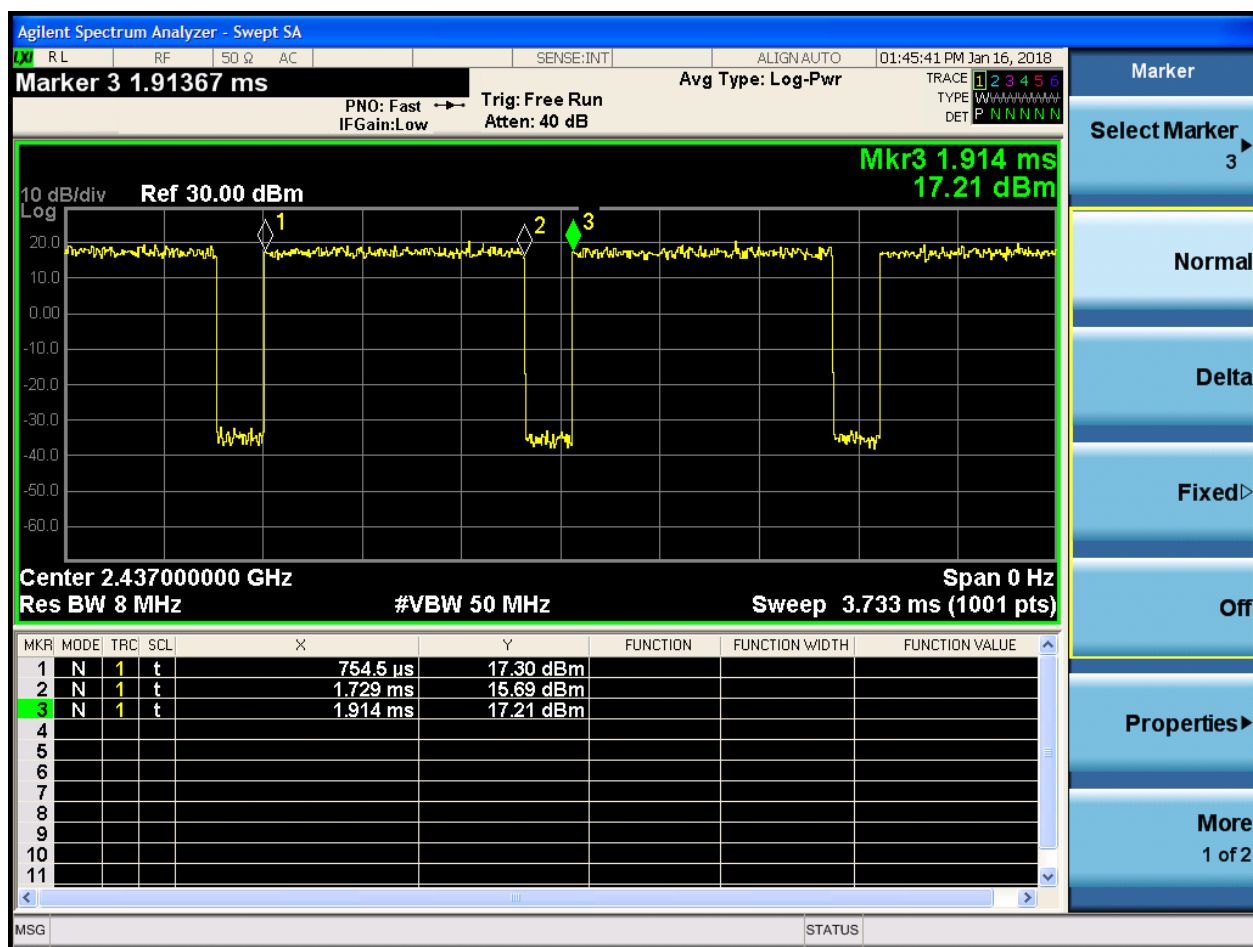


11N20MIMO_@Ant1



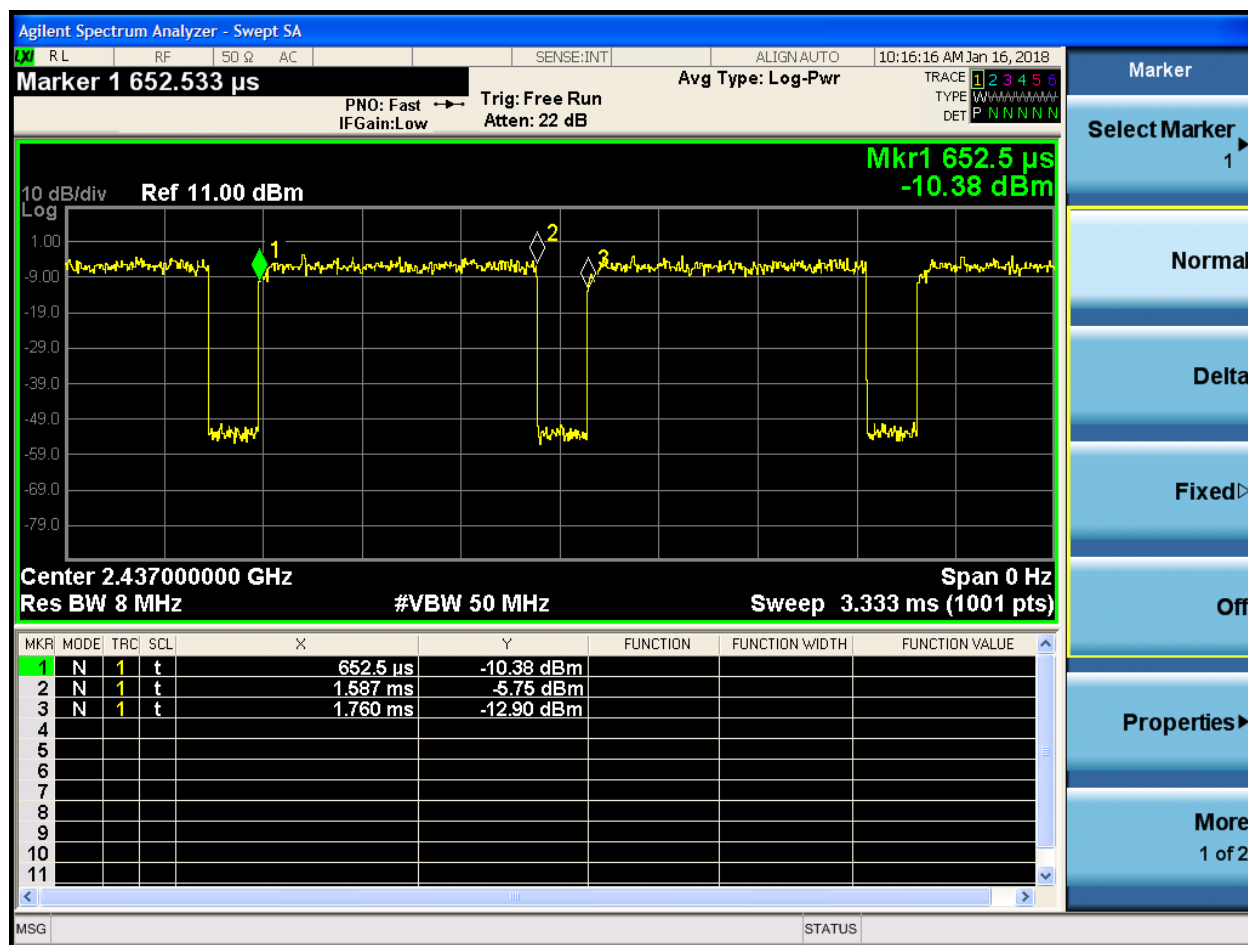


11N20MIMO_@Ant2



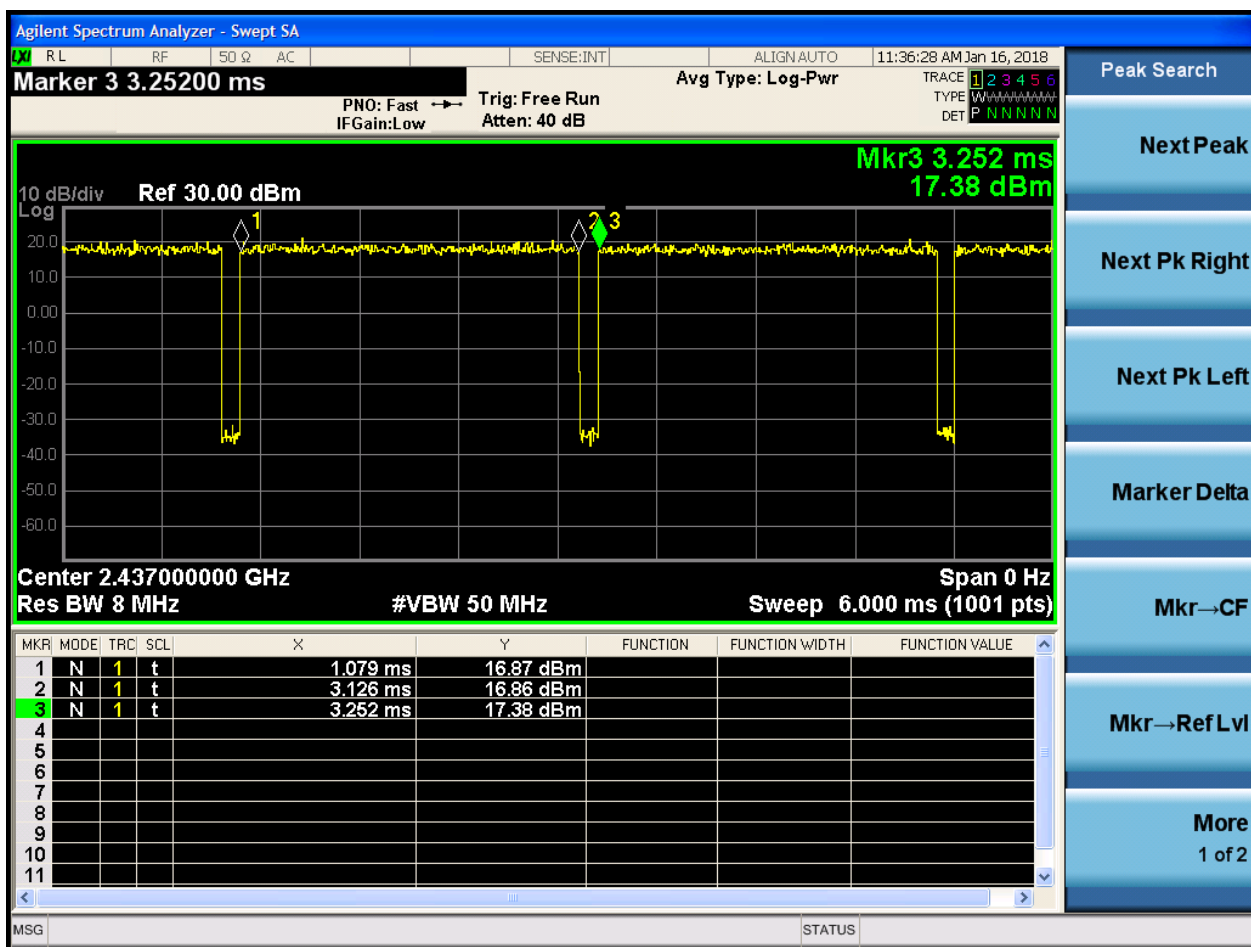


11N40SISO_@Ant1



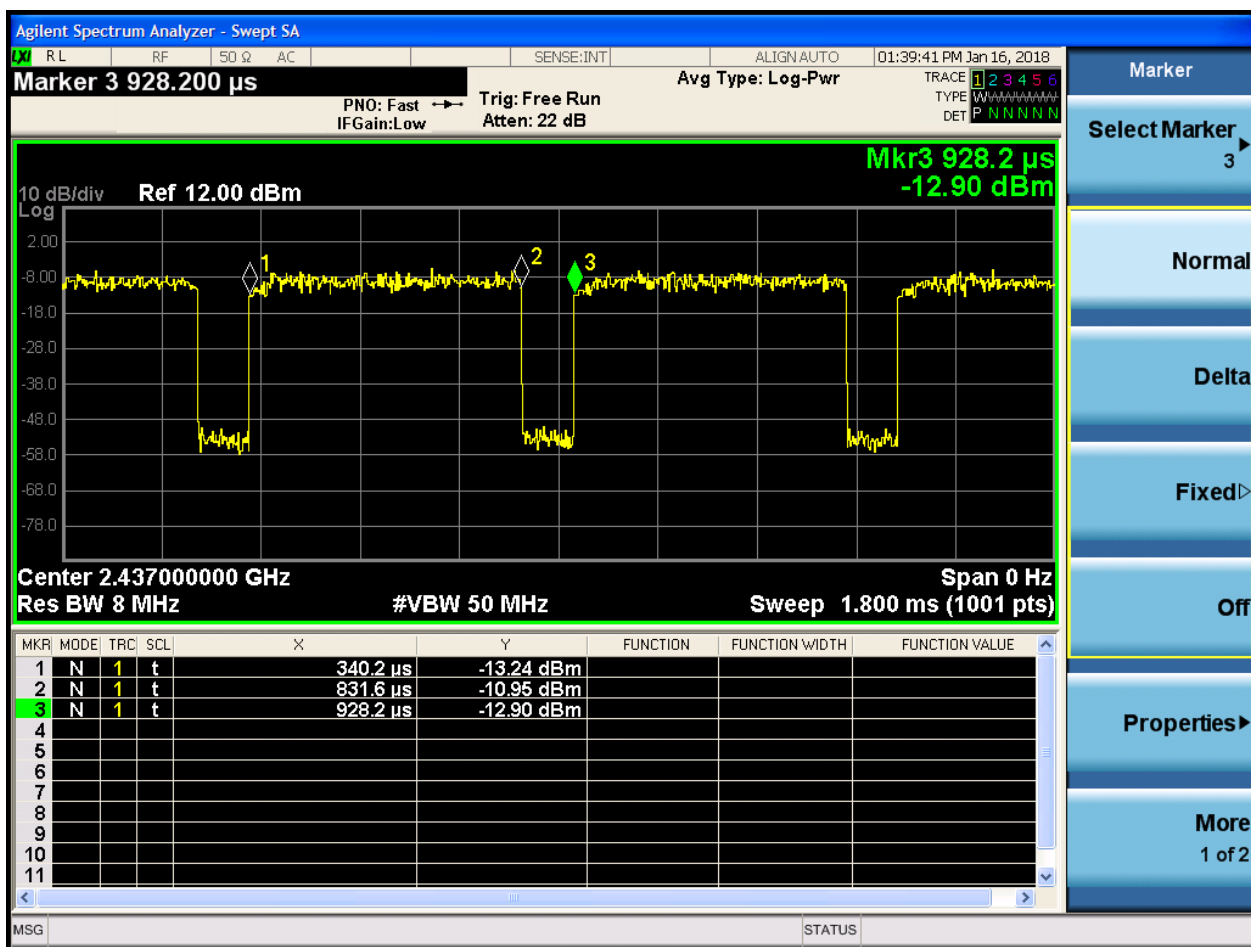


11N40SISO_@Ant2



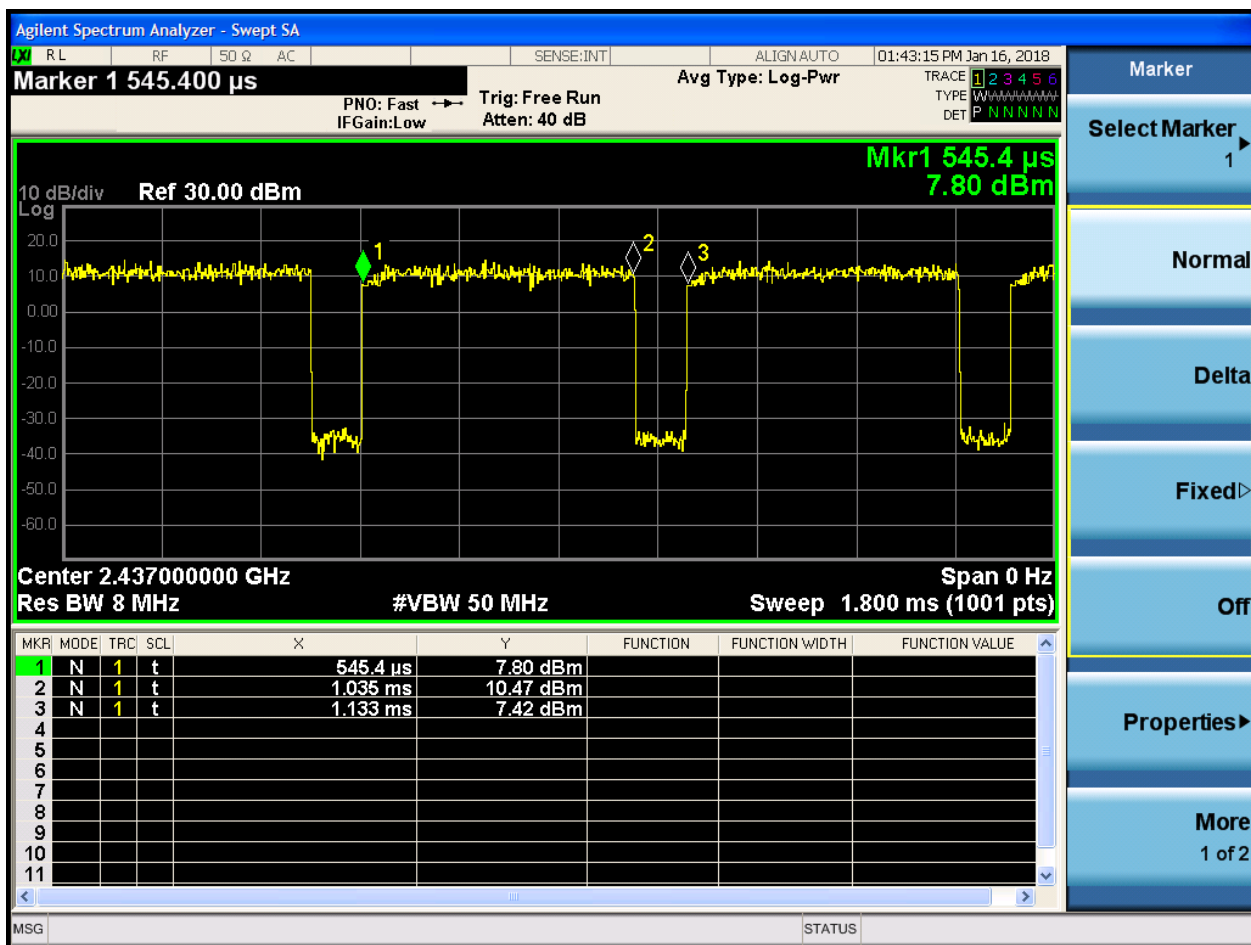


11N40MIMO_@Ant1





11N40MIMO_@Ant2



Appendix D: Maximum Conducted Average Output Power

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11B	L	2412	Ant 1	98	16.92	pass
11B	L	2412	Ant 2	99	17.28	pass
11B	M	2437	Ant 1	98	17.43	pass
11B	M	2437	Ant 2	99	17.15	pass
11B	H	2452	Ant 1	98	16.99	pass
11B	H	2452	Ant 2	99	17.35	pass
11B	H	2462	Ant 1	98	14.84	pass
11B	H	2462	Ant 2	99	15.31	pass
11G	L	2412	Ant 1	95	17.40	pass
11G	L	2412	Ant 2	95	17.62	pass
11G	M	2437	Ant 1	95	17.73	pass
11G	M	2437	Ant 2	95	17.45	pass
11G	H	2452	Ant 1	95	17.34	pass
11G	H	2452	Ant 2	95	17.7	pass

Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11G	H	2462	Ant 1	95	15.35	pass
11G	H	2462	Ant 2	95	15.66	pass
11N20	L	2412	Ant 1	95	17.08	pass
11N20	L	2412	Ant 2	96	17.49	pass
11N20	M	2437	Ant 1	95	17.56	pass
11N20	M	2437	Ant 2	96	17.37	pass
11N20	H	2452	Ant 1	95	17.23	pass
11N20	H	2452	Ant 2	96	17.63	pass
11N20	H	2462	Ant 1	95	15.06	pass
11N20	H	2462	Ant 2	96	15.58	pass
11N20m	L	2412	Ant 1	84	14.56	pass
11N20m	L	2412	Ant 2	84	14.95	pass
11N20m	L	2412	SUM	-	17.77	pass
11N20m	M	2437	Ant 1	84	15.02	pass
11N20m	M	2437	Ant 2	84	14.81	pass
11N20m	M	2437	SUM	-	17.93	pass
11N20m	H	2452	Ant 1	84	14.3	pass

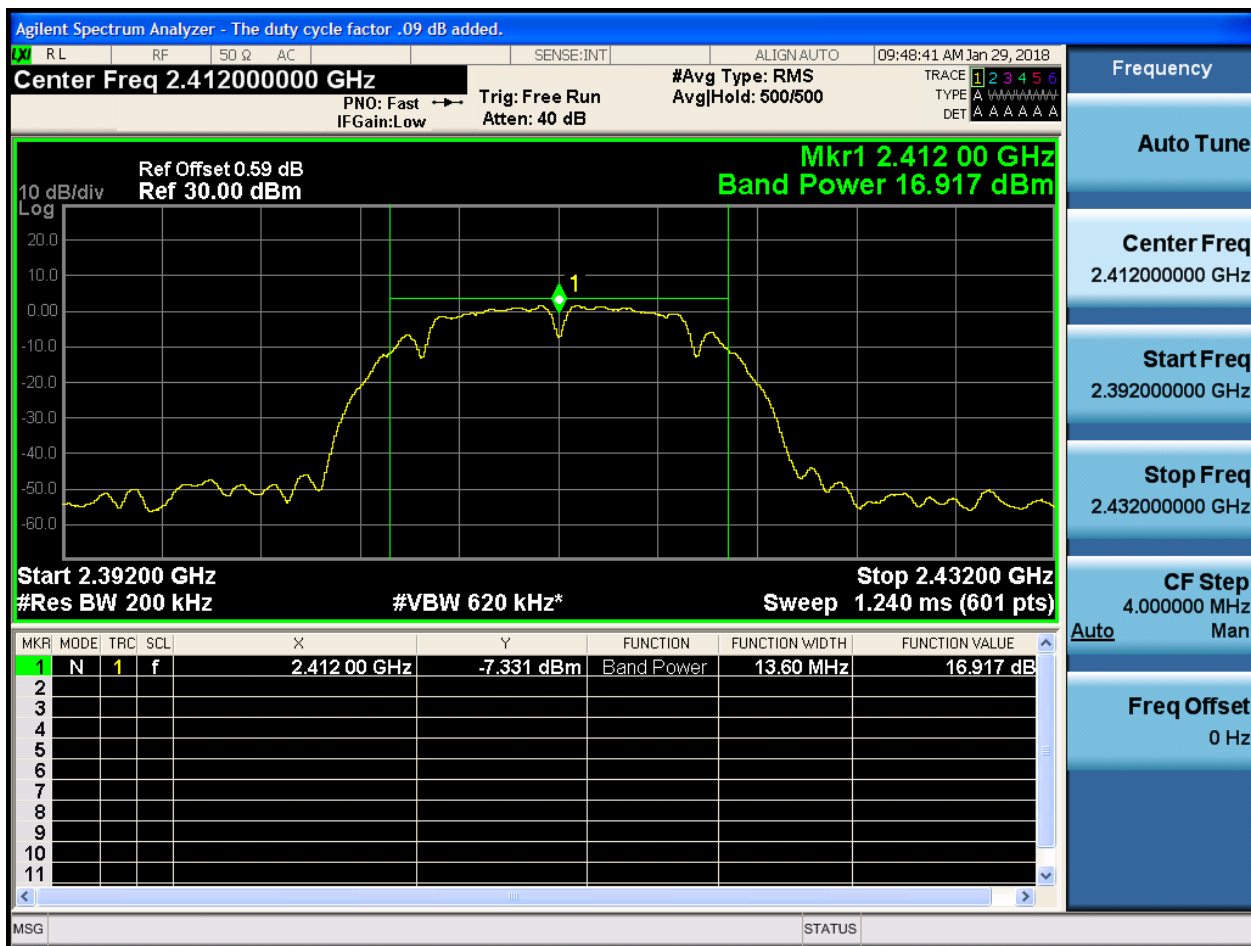
Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11N20m	H	2452	Ant 2	84	14.93	pass
11N20m	H	2452	SUM	-	17.64	pass
11N20m	H	2462	Ant 1	84	12.51	pass
11N20m	H	2462	Ant 2	84	13.04	pass
11N20m	H	2462	SUM	-	15.79	pass
11N40	L	2422	Ant 1	84	15.24	pass
11N40	L	2422	Ant 2	84	15.62	pass
11N40	M	2437	Ant 1	84	15.46	pass
11N40	M	2437	Ant 2	84	15.55	pass
11N40	H	2452	Ant 1	84	15.39	pass
11N40	H	2452	Ant 2	84	15.51	pass
11N40m	L	2422	Ant 1	84	12.21	pass
11N40m	L	2422	Ant 2	83	12.65	pass
11N40m	L	2422	SUM	-	15.45	pass
11N40m	M	2437	Ant 1	84	12.50	pass
11N40m	M	2437	Ant 2	83	12.57	pass
11N40m	M	2437	SUM	-	15.55	pass



Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11N40m	H	2452	Ant 1	84	12.51	pass
11N40m	H	2452	Ant 2	83	12.49	pass
11N40m	H	2452	SUM	-	15.51	pass

Part II - Test Plots

2.1 11B_L@Ant 1





2.2 11B_L@Ant 2





Agilent Spectrum Analyzer - The duty cycle factor .09 dB added.

Center Freq 2.43700000 GHz

#Avg Type: RMS
Avg/Hold: 500/500

TRIG: Free Run
Atten: 40 dB

Ref Offset 0.59 dB
Ref 30.00 dBm

Mkr1 2.437 00 GHz
Band Power 17.426 dBm

Start 2.41700 GHz
#Res BW 200 kHz

Stop 2.45700 GHz
Sweep 1.240 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.437 00 GHz	-6.963 dBm	Band Power	13.60 MHz	17.426 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.43700000 GHz

Start Freq
2.41700000 GHz

Stop Freq
2.45700000 GHz

CF Step
4.000000 MHz
Man

Freq Offset
0 Hz



2.4 11B_M@Ant 2





Agilent Spectrum Analyzer - The duty cycle factor .09 dB added.

Center Freq 2.45200000 GHz

#Avg Type: RMS
Avg|Hold: 500/500

TRIGGER: PNO: Wide → Trg: Free Run
IFGain: Low Atten: 40 dB

Ref Offset 0.59 dB
Ref 30.00 dBm

Mkr1 2.452 00 GHz
Band Power 16.992 dBm

Start 2.43200 GHz
#Res BW 200 kHz

Stop 2.47200 GHz
Sweep 1.240 ms (601 pts)

#VBW 620 kHz*

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.452 00 GHz	-7.089 dBm	Band Power	13.60 MHz	16.992 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.45200000 GHz

Start Freq
2.43200000 GHz

Stop Freq
2.47200000 GHz

CF Step
4.000000 MHz

Man

Auto

Freq Offset
0 Hz

MSG

STATUS



2.6 11B_H_2452@Ant 2

